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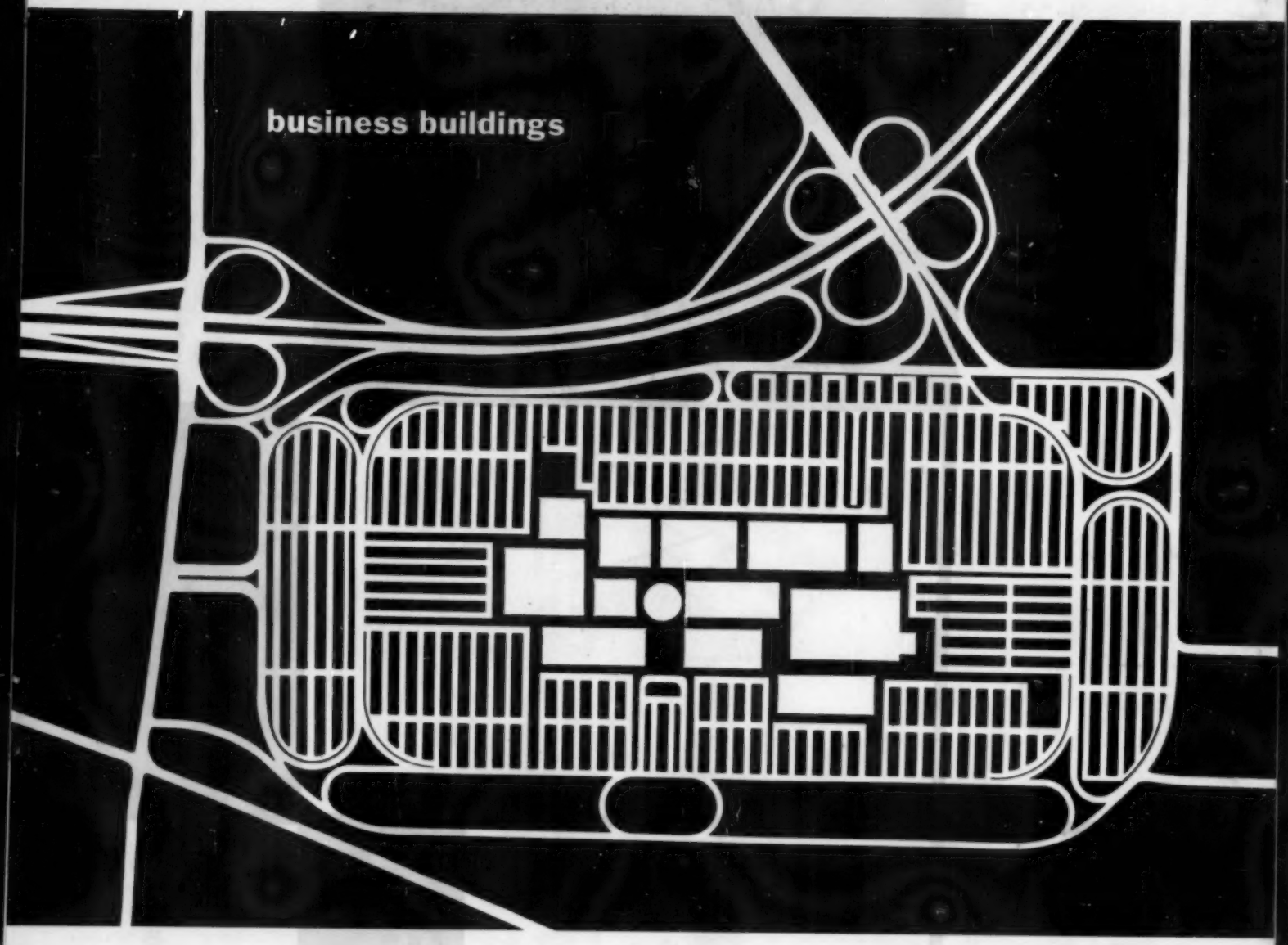

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Published monthly by REINHOLD PUBLISHING CORPORATION, 430 Park Avenue, New York 22, N. Y. Second-class mail privileges authorized September 21, 1951 on re-entry at Post Office, New York, N. Y., under Act of March 3, 1879. Professional subscription — $5. (For full data, see page 13.)
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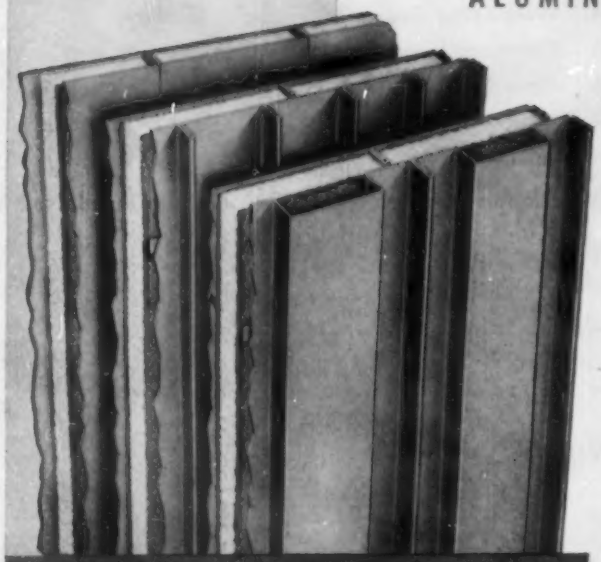

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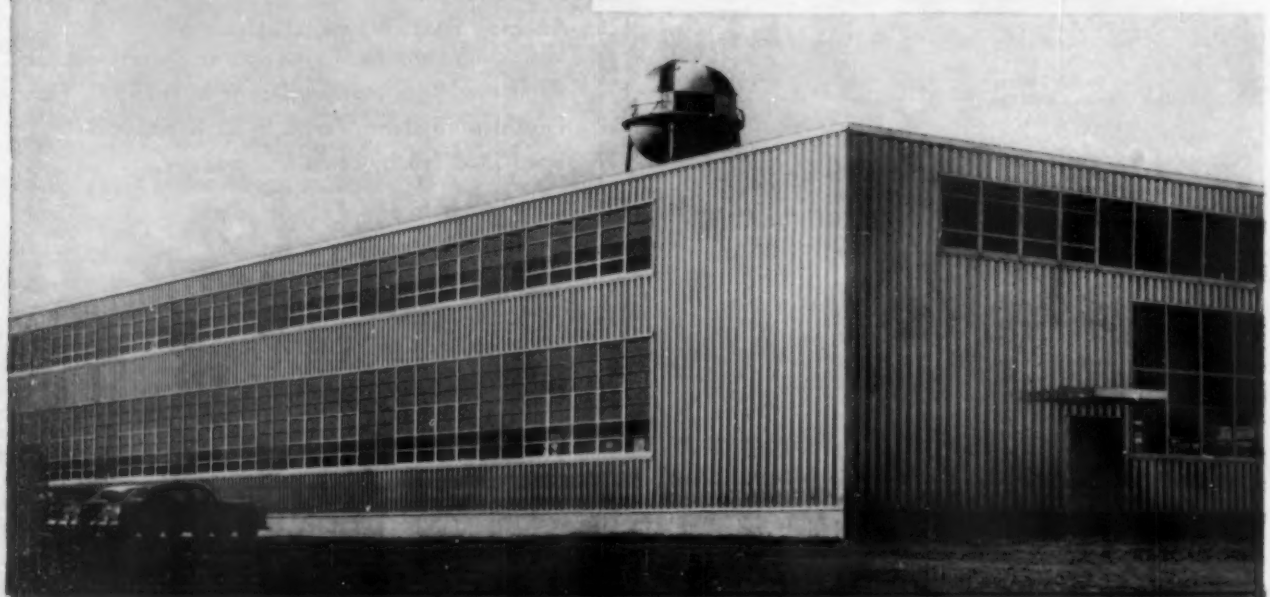

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It's the Law by Bernard Tomson

P/A Office Practice *column on the legal aspects of architecture and engineering.*

The subject of mechanics' liens for architectural services rendered seems to be one of general interest, particularly because at times it offers the only effective remedy against an insolvent client. The law varies considerably from state to state; it is technical, and it is quite important that it be precisely followed. No absolute generalizations, therefore, may be made, such as are found in Parker & Adams, *The A.I.A. Standard Contract Forms And The Law*, (Little, Brown & Co., 1954), reviewed in February 1955 P/A, where it is stated:

"It is possible that, in a dispute with a client who is refusing payment of the balance of his fee claimed by the Architect, it may be useful for the Architect to file a lien against the property involved in the improvement on which the Architect has rendered his service. If so the Architect should bear in mind that the courts have held that no right of lien exists for services connected with the making of drawings and specifications where no construction work has been performed."

This statement, though accurate for some situations in a number of states, is not accurate or applicable to other situations in other states. In New York, for example, it can unequivocably be said that an architect has a right of lien for services connected with the making of drawings and specifications (even preliminary plans) where no construction work has been performed.

The foregoing, however, was not always the case in New York. Prior to the amendment of the Lien Law of New York, in 1916, an architect in New York was not entitled to a mechanic's lien for services rendered in the preparation of plans. Again, in 1934, the Lien Law of New York was amended to provide expressly that "the drawing by any architect or engineer or surveyor or any plans or specifications or survey" which are prepared for, or used in connection with, an improvement will entitle such architect or engineer or surveyor to a lien. This language was construed by the Appellate Division of the Supreme Court of New York (*Matter of Bralus Corp.*) to cover liens for preliminaries. (IT'S THE LAW, March 1954 P/A.) On appeal to the Court of Appeals, the highest court of New York, it was held that an architect was entitled to a lien for preliminaries, provided they could be characterized as "plans" as that term is understood in the building trades. The Court said:

"Respondent's mechanic's lien for making 'drawings of preliminary plans' and allied architectural services which never became embodied in an erected structure should not summarily be dismissed on motion under subdivision (6) of section 19 of the Lien Law, upon the ground that they are not final plans. Mechanic's liens may be filed for materials furnished or labor performed 'for the improvement of real property' (Lien Law, sec. 3). Subdivision 4 of section 2, as amended by chapter 608 of the Laws of 1934, defines 'improvement' as including 'the drawing by any architect or engineer or surveyor, of any plans or specifications or survey, which are prepared for or used in connection with such improvement.' Nothing contained in this language disallows architects' plans which are preliminary in nature, provided that they have progressed to a point where they can be characterized as 'plans' within the meaning of that term as it is used in the building trades. More than mere rough sketches is required in order to render lienable an architect's charges, but the term 'preliminary plans' includes drawings which are sufficiently formal to be called plans, but which have been prepared to assist the owner in deciding whether he wants to have a building constructed according to such a design, or which leave some ultimate details to be selected and added later." (*Matter of Bralus, 307 N.Y. 626*)

Due to constant changes in the law and in light of the peculiarities of the law in each particular jurisdiction, the following questions pertaining to liens for architectural services should be considered:

(a) Does any right of lien exist under any circumstances in your state?

(b) Does the architect have a lien for supervision only in your state, whether or not he has drawn plans and specifications?

(c) Does the architect in your state have a lien for plans and specifications if he supervises construction?

(d) Does the architect in your state have a lien if he draws plans and specifications, but some other architect supervises construction?

(e) Does the architect in your state have a lien if he draws plans and specifications and construction proceeds, but his plans and specifications are changed, varied or abandoned?

(f) Does the architect in your state have a lien if construction does not proceed, but he has drawn complete working drawings and specifications?

(g) Does the architect in your state have a lien for preliminaries, sketches, or other work which does not involve actual drawing?

See in connection with all of the above, IT'S THE LAW, August 1952 P/A and March 1954 P/A; *Architectural & Engineering Law*, Tomson (Reinhold, 1951, pp. 316-324); *New York Law of Mechanics Liens*, Blanc (Matthew, Bender, 1949, pp. 66, 96, 99).

See all of these by all means, but more important than any of the citations must be the recognition that if it is your money that depends on the answers to these questions the answers should be given by your lawyer, whose advice should be (because of the time elements involved) promptly obtained. Nor is it important that the attorney be a "specialist." Any competent attorney is in a position to advise an architect as to his rights in the state in which he practices.

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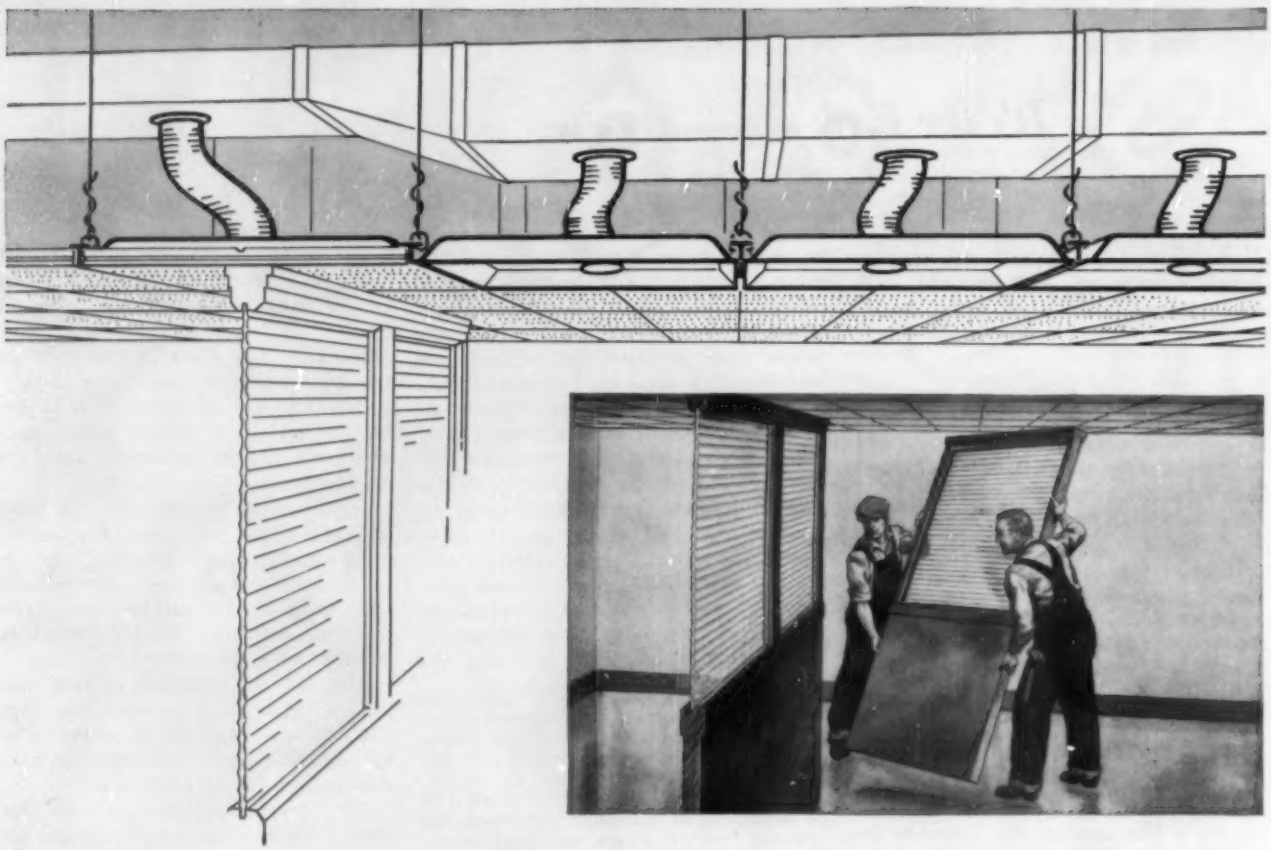

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Out of School by Carl Feiss

Out of School *will hereafter appear at irregular intervals. Next month in this space begins a column on mechanical engineering, written by William J. McGuinness.*

A light breeze from the sea was rippling the Bass River. The Dean of the School of Architecture of Theleme, sitting in the bow of our little boat, reeled in his line and stowed the rod carefully alongside the gunnel. Little waves gurgled under the boat; a great blue heron wheeled overhead. The mood was a pendent one—and I waited with the dripping oars poised, letting the boat drift into the current of the outgoing tide.

Speaking quietly, his teeth clenching his old pipe, my friend the Dean said, "Carl, with the September issue you will have consummated five years of writing on architectural education in PROGRESSIVE ARCHITECTURE. Are you satisfied with what you have done? In your opinion has the job been worth while?"

I sat silent for some moments listening to the distant frogs and the beginning of the night noises of the river. The boat had drifted into midstream. "The job has been worth while but OUT OF SCHOOL stops its regular monthly appearances with the September issue," I said. "The reasons really are very simple. When the column was started almost nothing had been written on education for the architectural public. September 1949 does not seem very long ago to you perhaps, but it does to me. Back then Tom Creighton said, 'Let's try to see if there is a reading public for an informal discussion of architectural training.' So I began to write whatever seemed important, and after a while, people began to read into what I was saying what they too thought was important, each interpreting for himself. Gradually the column, which was never more than a confessional of my own beliefs about architecture and education, became a kind of little river flowing easily along, not very deep, not very swift, not very clear —like the river on which we are floating this evening.

"Writing the column became very easy after a while. Then it became fun and the response became fun, too. Letters throughout the five years came quite regularly and were often much better than what had stimulated them."

The Dean asked, "Well why are you quitting? Are the problems of architectural education really solved? Have the schools quieted down? Are there better opportunities to discuss architectural education than there were 60 issues of P/A ago?" He paused to pet a midsummer mosquito purring gently on his arm.

So to answer the Dean of Architecture at Theleme, a person familiar to the readers of this column, I told him what seemed today to be the case for the education of the comprehensive architect—the *whole* architect—the city builder—the city and regional planner —the renewer of cities—the creator of man-made environments for human use. These weighty subjects were the theme of OUT OF SCHOOL during the last five years. To the degree that it was possible, these problems were tied into the action programs of the American Institute of Architects, the American Institute of Planners, the Association of Collegiate Schools of Architecture, the Committee on Education of the AIA, the National Architectural Accrediting Board, the Committee on Organization of the AIA, the Commission for the Survey of Education and Registration, the National Council of Architectural Registration Boards, the architectural schools (including Theleme), and the students. Nowhere else in the pages of our technical literature has there been an attempt at this kind of cross-the-board coverage. To a degree it has been successful, way beyond my expectations. Interest and readership remained high and at meetings on education there seemed to develop a wider appreciation of joint problems and interests. Working with the AIA Committee on Education and others, we were able to set some of the stage for the Burdell-Bannister Report and for the very lively program now incorporated on the AIA Agenda. This column wishes to take neither credit nor blame. It seems to have served a good purpose and with enjoyment.

I have suggested to the Committee on Education of the AIA that it is the inherent duty of the Octagon not only to carry on what this column has tried to do, but also to amplify and supplement it with a real and current sounding board on matters pertaining to education and to the interests of students. The job is bigger than can be handled by one columnist, once a month, in a technical journal. It should become the full-time responsibility of the Octagon staff to do a complete job in carrying out the intent of the Burdell-Bannister Report and the recommendations and action program of the AIA Committee on Education now clearly spelled out in recent reports of the Committee. Certainly if that Committee does the job it intends to do—and I have confidence in its present leadership—then it will be the duty of that Committee to report progress and ideas to the profession at large. It will then always be the responsibility of this magazine and others to support or condemn, to praise and help forward a positive program, or to serve as a vigilante when the occasion arises.

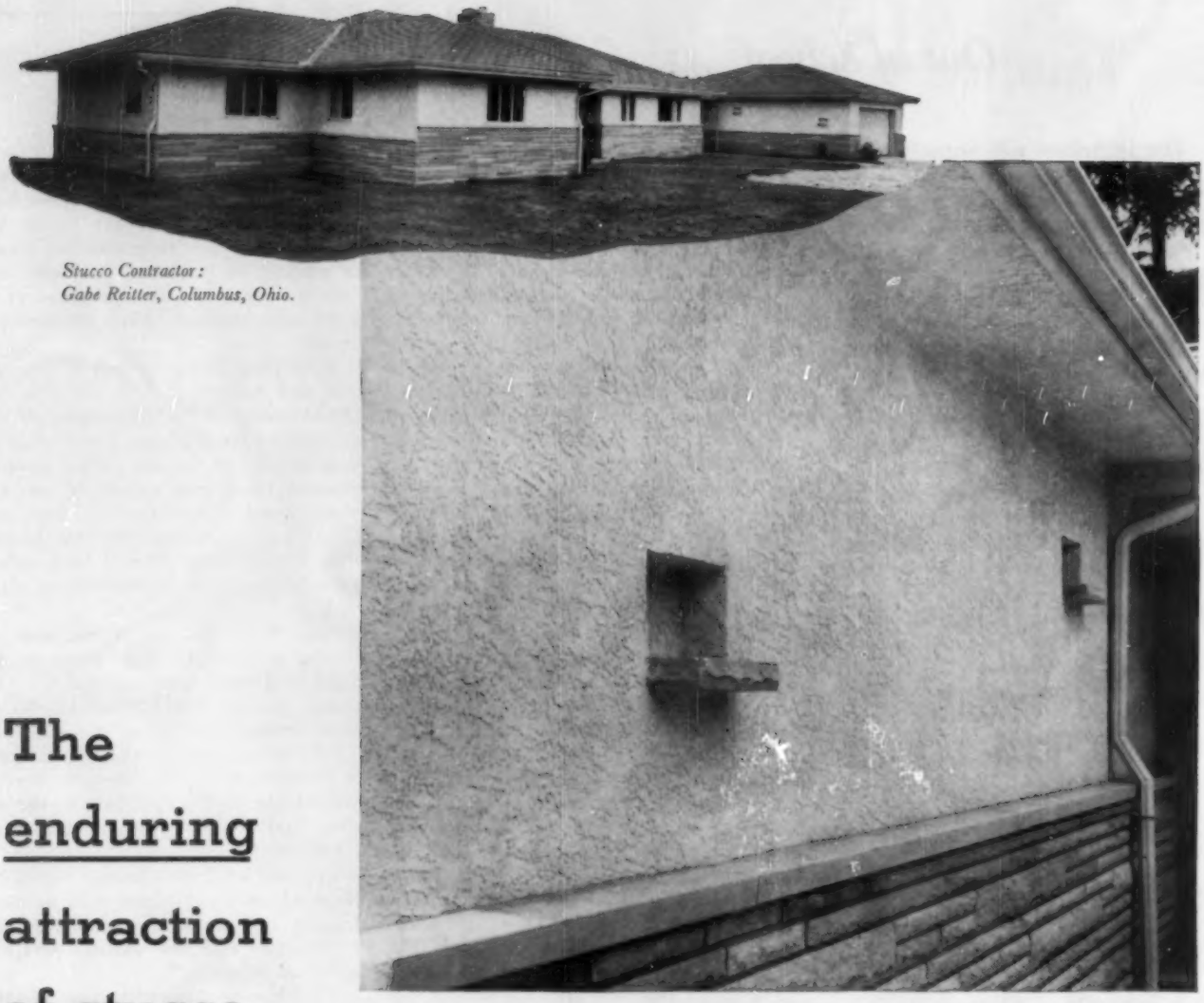
In retiring from the field of journalism and reporting, I do so with the humble sense of the inadequacy of the role played but with the firm conviction that the future of the entire country demands competent training of the comprehensive architect at a high national level. Let me close this column then with a quote from a little talk I gave at the AIA Convention on June 21st.

"The American way of life, however it may be defined, should never be defined as a small scale concept. . . . No design project should be too big for us to understand and for us to design. . . .

"To the degree that the creation of a new environment for living is the responsibility of the architect, to the degree that he is willing and able to establish the standards and criteria, to design and build with human happiness in mind, to that degree will he have lent to his people a modicum of the advantages and the culture and the spirit of America."

To Thomas Creighton and Charles Magruder, my affectionate and continuing esteem. No editors could have been more co-operative or friendlier, and I owe them a limitless debt for their granting me these pages as an uninhibited sounding board. To the readers of OUT OF SCHOOL, Good luck! I'll be seeing you around, and appearing in these pages several times a year.

Special News Announcement: Prof. Carl Feiss has recently been appointed Professor Emeritus on Sabbatical leave in the field of Comprehensive Architectural Education to the School of Architecture and Planning at the University of Theleme. In making this announcement the Dean of the School of Architecture hastened to explain that because of unforeseen administrative difficulties, Professor Feiss will serve in absentia and without remuneration. Nevertheless, because of his new responsibilities Professor Feiss has, with the full concurrence of the Dean (and possibly a prod), dropped writing his monthly magazine column on architectural education in which Theleme has frequently appeared. There is no significance whatsoever to the rumor that the Board of Trustees of Theleme was responsible for this action on the part of Professor Feiss.



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The Cost of Architectural Services by Victor Gruen*

P/A Office Practice ***article on the advantages of the cost-plus professional fee.***

Our office has abandoned so-called percentage fee contracts. We do not believe that a fixed ratio exists between architectural costs and building costs, or that one should strive for a definite relationship between the two. Many of our clients point to the fact that other architectural offices propose services on a percentage fee and often quote 6 percent of the construction cost as adequate for their services. They ask whether we can assure them that our work, done under a cost-plus system, will cost them no more. Our answer to this question, asked by a shopping-center client, was as follows:

The purpose of planning services and architectural services is to create superior building; superior, not just from a point of view of pure esthetics or shopping atmosphere, but most definitely from the point of view of economic soundness.

Any expenditure during the planning stage which is lower than the resulting economic advantages is obviously a justified expenditure.

Thorough planning affects the economic soundness of a project in a number of ways. During the preliminary stage the concept of the project is born. It is well worth while during this stage to spend sufficient time in the study of the basic scheme as its quality will have a very definite influence on the amount of rentable space which can be provided, on the quality of this rentable space, on the amount and quality of the parking which can be provided, on the shopping comfort and the shopping atmosphere, on the promotional impact of the project, and thus, very directly, on the income of the center from rents and other sources. A well thought-out basic scheme will also result in the creation of the largest possible amount of income-producing space at the lowest possible construction cost.

During the working-drawing stage the time and thoroughness invested in planning will bear ample fruit. Thoroughly developed details will save money in capital cost and in upkeep and maintenance. Working drawings and specifications containing more than the normal amount of details will give the greatest possible amount of information to the bidding contractors and general contractors and will permit them to quote their figures closer and with less allowances for unknown features than is usual.

Thus, the bids received on the basis of working drawings on which more time and money have been spent will be considerably lower than bids on the basis of a set of working drawings on which one has skimped. Additional savings will result during the construction. Working drawings with an unusually high degree of detailing will give minimum opportunity to the contractor for claiming extras because of misunderstandings or lack of clarity.

To summarize, then, our opinion is that it is not important whether the architectural costs are held to a certain percentage of the building costs.

The all-important figure to consider is the sum total of the project cost, of which the architectural and planning cost is a small part.

If one considers that the project with a lower planning cost may be more expensive to build, may produce less income, and may incur higher operating expenses, it becomes clear that *fruitful investment* in planning costs is the soundest investment that can be made in any construction project.

where savings can be made

It is possible to effect savings in the cost of architectural services in such a way that the project and its effects are not harmed. We explain to our clients that the tools for such savings include the following:

Efficient co-ordination between owner and architect. It is desirable that instructions to the architects be given by one authorized person on the side of the owner; that such person should be able to make decisions on his own or within the shortest time after conferring with others in the ownership organization. For specific questions, this authorized owner's representative may call on other members to sit in on meetings, but instructions and decisions should always come from him directly to the architect. The architect should be organized in a similar manner.

Evenly flowing planning program. Any interruptions and delays, as well as speed-up periods, should be avoided. It must be realized that the architect has to set a complicated apparatus into motion when a project starts. This apparatus consists of a considerable number of highly trained and highly paid men. A lack of decision, even if it involves only a few hours, will have the effect of cutting the usefulness of the time spent by the members of the organization. An interruption of work cannot be achieved from one hour to the other, or even from one day to the other. It sometimes takes weeks to stop the machinery completely. When work then starts again, after such interruption, time is wasted in picking up where work was stopped, and this pick-up is very often done by new men unfamiliar with the work performed by others before them. Indecision and changing decisions create uncertainty in the mind of everyone working on a project, leading to misunderstandings and slowing down of the work process.

Avoidance of major changes during the preliminary stage and of all changes during the working-drawings stage. Major changes during the preliminary stage send into the wastepaper basket large bundles of drawings which have to be drawn again. Any change during the working-drawing stage, even a small one, may involve work on hundreds of sheets of drawings, and retards work considerably.

Realistic planning and construction schedule. A realistic schedule will give sufficient time to the planners to achieve the goal date without haste and overtime, but with such reasonable speed as to keep the time investment of supervisory personnel to a minimum. A prolonged planning and construction schedule incurs the employment of supervisory and specialized personnel for overtime periods much in excess of the ones which would be desirable and necessary. Planning and construction in separated stages has, of course, an unfavorable influence on planning costs.

A minimum of large meetings. Meetings at which many persons of the architect's staff are present may be necessary during the concept stage. However, during the latter part of preliminary work, during the working-drawing stage and during the construction stage, small meetings involving a minimum number of men are preferred. Large meetings have the effect of tying up the time of participants whose absence has a slowing influence on the drafting and engineering crews.

These are the reasons why it seems to us impossible to fix a percentage relationship between architectural services and construction cost. With the change of a few particulars, the points could apply equally to many buildings other than shopping centers. There are areas of planning and design where a greater expenditure of time and money is justified, and where economic return will exceed the cost. On the other hand, there are areas where, by efficient organization, a lesser expenditure for architectural services can be achieved without loss of design quality or final economic advantage to the owner. These, rather than an arbitrary percentage, are the true factors in the ratio of design cost to project cost.

* *Architect, New York, Los Angeles.*

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The Architect and Congress

An* Office Practice *article summarizing architects' views on the right of Congress to criticize public building design.

A very important point of architectural practice has been raised by the Air Force Academy controversy. (*See* WASHINGTON REPORT, *page 84.*) It is simply this: when an architect has been chosen by a government agency (in this case by a Selection Board set up by the Air Force Secretary), must his design result please both Houses of Congress as well as his direct client? Must he be prepared to face inquisition by Congressional Committees and answer such charges as the one by Frank Lloyd Wright that the design is "half-baked"; and the one by the Allied Masonry Council that it is "un-American; reflects foreign influences"?

Since there was little precedent for the House Appropriations Committee's original turndown of Skidmore, Owings & Merrill's preliminaries because its members did not like them, P/A solicited the opinions of about a hundred leading architects and passed the results on to Secretary Talbott, members of the Congressional Committees involved, and the architects.

In the meantime, the AIA, through its President and its Executive Director, presented to Congress a statement from the Board of Directors to the effect that the architects and consultants had been chosen by "ethical and objective procedures"; that "design is best accomplished by men who are trained and experienced"; and that the Board believed "the commissioned architects should continue with further development of their plans and the Department of the Air Force should proceed with confidence."

Almost without exception, the architects questioned by P/A agreed. Following are a few typical quotes to this point, from the many wires received.

"Approval of plans for government project should be by a qualified technical committee under authority of contracting and using agencies, never by laymen, whether Congressmen, Senators or otherwise." WURSTER, BERNARDI & EMMONS.

". . . regret unwarranted petty criticism by laymen and architects which has damaged prestige of architectural profession." MORRIS KETCHUM, JR.

"Considering Skidmore, Owings & Merrill's record of accomplishments in design with the imposing array of consultants, Committee should accept the judgment of the architect." D. KENNETH SARGENT.

". . . debatable point that Congress is an authority on design." HENRY HILL.

"It strikes us as extremely unfortunate that the uninformed layman can arbitrarily censor or control the advancement of good design through political action." A. QUINCY JONES.

"Perception of esthetic values not a usual part of legal, political, or economic training. . . . If project can be shown to meet all standards of practicality, perhaps the rest will be left to judgment of the qualified and unbiased. Need is for way of doing this at all levels of public works." PAUL SCHWEIKHER.

"Like Voltaire, I do not agree with the design, but defend their right to do it. . . . The honest and sincere efforts of one of the finest American architectural firms should not be subjected to the thoughtless and shallow criticisms of every politician and curbstone philosopher." JAMES M. HUNTER.

"Art and architecture cannot be legislated. If the buildings work structurally and mechanically and meet the budget the appropriation should be approved. If House Committee members can show professional qualifications for judging architectural design, let them reject it." JOHN LINDSTROM of MAGNEY, TUSSLER & SETTER.

"It seems a mistake that a Congressional Committee has set itself up as an architectural jury. . . . Surely all American art, whether pure art, architecture or music, should be free from political pressure." MARION I. MANLEY.

"The tragic note to us is that legislation in design, nurtured by superficial and facetious criticism will without doubt prove detrimental to the result, as the fresh inspiration, the life and vitality of the concept will have been brushed away." FISHER & FISHER.

"House Committee action concerning designs for Air Academy is of great importance to the architectural profession. All members should protest this action by amateurs in architecture.... The Committee should be guided by the broadest artistic policies entirely free from political censorship or thought control such as exists in totalitarian countries." VICTORINE & SAMUEL HOMSEY.

". . . How is competence of critical and constructive comment established, on which approval by authorized bodies is based? . . . Principles of design and criteria to judge it will never be reliable unless personal likes and dislikes are recognized not as absolutes but clearly as conditioned effects." RICHARD J. NEUTRA.

"It is our opinion that the best way to insure mediocre architecture is to allow unqualified persons to judge design. The AIA competitions code observes this situation by requiring majority of jurors to be architects." CONRAD E. GREEN.

"Congress authorized Mr. Talbott to proceed with the design of an Air Academy, and the Secretary employed competent architects, engineers and consultants. I can see no reason why Congress retains the moral right to withdraw its authorization, by saying, in effect: No Colonial churchee, no checkee!" JULIAN E. BERLA.

Several thoughtful replies came to P/A indicating a feeling that designs had been presented too abruptly, and that both short-term and long-range education of the public is needed. "The profession has obviously not told the whole story to the public. We must be more honest in our presentation of our ideas, ideals and designs. The public including our legislators deserves the right to know what we are doing and why . . .," wrote CURTIS & DAVIS, for instance.

The one reply received, at press time, from a legislator, did not indicate much desire to hear the "whole story." Congressman HARRY R. SHEPPARD (R., Calif.), acknowledging receipt of copies of the telegrams quoted from above, wrote:

"We as members of the Appropriations Committee feel we have a responsibility to the taxpaying public, and, much as I regret to tell you so, I think perhaps we are better qualified in that field than you might be. . . . I can assure you that the Members of the Committee are working very closely with Secretary Talbott and fully intend to work out the issue satisfactorily to the benefit of all concerned without your specific intervention."

In documenting attitudes toward Congressional control of architectural design, this article has not quoted comments on the design itself. They were many, almost all favorable, ranging from the sarcastic: "We just happen to have some sketches of a B-52 bomber decorated in the Williamsburg manner if the Congress would like to see them" (from ROBERT A. LITTLE) to the very sober: "A proud example... [of a] genuine architectural expression which vigorously characterizes the present American approach in science and industry" (from WALTER GROPIUS).

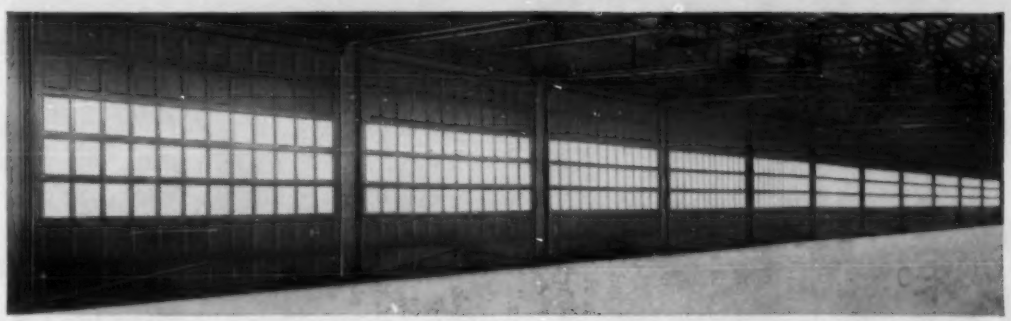
There were a few disagreements: "I consider the proposed architectural effects dull and extremely ugly," said ARTHUR BROWN, JR., of San Francisco. PAUL THIRY and HAROLD SPITZNAGEL felt too much steel and glass were indicated in the preliminaries. But from the point that Congress should not be an arbiter of design, there seemed to be no dissent on the part of members of the profession.

NATIONAL FOOD STORES MILWAUKEE DISTRIBUTION CENTER speeds heavy truck traffic with 19 Crawford Industrial Doors equipped with Electric Operators

National Tea Co. branch office and warehouse in Milwaukee is a typical modern industrial structure in which functional efficiency and good design are competently combined. The building is of steel and masonry construction and is 574 feet long, 399 feet wide and 16 feet high. It encloses approximately 230,000 square feet of floor space. As a branch warehouse for National Tea Co. which supplies all the merchandise for the National Food Stores in Wisconsin and Upper Michigan, it handles merchandise traffic up to 500 tons a day in about 100 vehicles.

To accommodate this traffic, the building is equipped with 12 — 18′0″ x 14′0″ and 7 — 12′0″ x 14′0″ Model SLA Crawford Marvel-Lift Industrial Doors, all equipped with electric operators with local and remote controls. Because of the sturdy construction of these doors and the cushioned operation achieved through the use of electric operators (always easier on doors than manual operation) these doors are in excellent condition after three years of constant use. If you have a door problem, we'll welcome your inquiry and it will get quick, intelligent attention.

Architects, write for complete file of Crawford literature including the Crawford 60-Second Door Selector, the easiest-to-use door manual ever published. Crawford Door Company, 174-20263 Hoover Road, Detroit 5, Michigan. Plants in 10 cities; Warehouses in 95 cities; Sales and Service everywhere. In Canada, F. Fentiman & Sons Ltd., Ottawa, Ontario.



National Tea Co., Milwaukee, Wis.

Architect and Engineer: **Lefebvre & Wiggins, Milwaukee**

Contractors: **W. W. Oeflein Inc., Milwaukee**

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Crawford Door Sales Co. of Wisconsin

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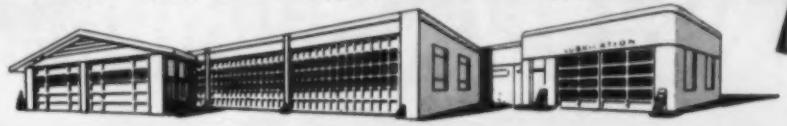
25th YEAR



PROGRESSIVE ARCHITECTURE published monthly by REINHOLD PUBLISHING CORPORATION, 430 Park Avenue, New York 22, N. Y. Ralph W. Reinhold, Chairman of the Board; Philip H. Hubbard, President and Treasurer; Fred P. Peters, Vice-President and Secretary; Alfred E. Fountain, H. Burton Lowe, Merald F. Lue, D. Bradford Wilkin, William P. Winsor, Vice-Presidents; Kathleen Starke, Assistant Treasurer. Executive and Editorial offices: 430 Park Avenue, New York 22, N. Y. Subscriptions payable in advance. Subscription prices to those who, by title, are *architects, engineers, specification writers, designers or draftsmen, or employes of architectural and engineering firms,* and to government departments, trade associations, members of the armed forces, college libraries, college students, publishers, advertisers, prospective advertisers and their employes—$5.00 for one year, $8.00 for two years, $10.00 for three years. Above prices are applicable in U. S., U. S. Possessions and Canada. Latin America and Philippine Republic—$10.00 for one year, $16.00 for two years, $20.00 for three years. All other foreign subscriptions — $15.00 for one year, $25.00 for two years, $30.00 for three years. Single copy — $1.00; special issues — $2.00 per copy. Printed by Publishers Printing Co., New York, N. Y. Copyright 1955, Reinhold Publishing Corp. Trade Mark Reg. All rights reserved. Indexed in Art Index and Architectural Index.

REINHOLD

genius: miraculous

Dear Editor: Felix Candela is a genius. I have met only a few geniuses but having had a chance to talk with Candela and to inspect his work, I am beginning to understand how one becomes a genius. First, it requires talent. Second, it requires an idea. Third, it requires the courage and the mental and physical stamina to concentrate on this idea. By this measure, Candela is a genius and architecture and engineering are going to benefit by his development of shell structures.

MILO S. KETCHUM
Denver, Colo.

•

Dear Editor: Felix Candela's church *(July 1955 P/A)* certainly appears aptly named or, perhaps, designed to suit a previously selected name. The Iglesia de la Virgen Milagrosa is a miraculous church, not only in the use of extremely advanced thin-shell design, but also and far more to the point in the emotional effect created by the form of the structure as a whole. After so many neo-Gothic façades clipped onto steel frames, after so many pseudo-Baroque frauds perpetrated in stone-faced concrete, after half a century of architectural legerdemain in which modern structures are unsuccessfully disguised as medieval heirlooms, one is absolutely startled when a church of such near-miraculous beauty is achieved.

The neo-Gothic has failed not only because the building materials used have little or no relationship to the finished appearance of the building, but also because this is not the Gothic Age. The true Gothic was not designed out of handbooks of antiquities, but in the spirit of the age as the newest, greatest, and best that could then be constructed. Hence it is that a poor photograph of a third-rate example of the true Gothic stirs one more deeply than first-rate neo-Gothic in the flesh. Candela in designing this church has achieved the newest, greatest, and best that can now be constructed. No more daring design concepts nor more sparing use of materials could be undertaken. The resultant effect is better than anything so far achieved in the neo-Gothic or pseudo-Baroque. One sees in the interior views of the church, in the great beauty of the basic structural curves, and in the relation of part to part, some sort of miraculous grotto wherein the fishers of men may be inspired to do far better than most have done in this age of anxiety.

J. O. STETSON
New York, N. Y.

consulting engineers

Dear Editor: I have before me your July 1955 issue of PROGRESSIVE ARCHITECTURE and note some of the impressive pictures in the P/A NEWS REPORTS. On page 76, in your report on our St. Louis Airport Terminal, you correctly mentioned the firm of architects and you mentioned the structural engineer retained by the City. You further mentioned Edgardo Contini, consulting structural engineer, who had nothing whatsoever to do with the design and construction of this terminal. You failed to mention the name of our company. Roberts & Schaefer Company designed the roof structure and were construction consultants to the contractor on this unique roof design.

We shall appreciate it if you called your readers' attention to this omission.

ANTON TEDESKO, Manager
Roberts & Schaefer Company
New York, N. Y.

magazines for Indonesia

Dear Editor: There is one thing I greatly would like your assistance on, if possible. There is a great need and hunger for American architectural magazines among the students here. As you probably know, there is no architectural school here, so most of the students get their training in the engineering school in Bandung and otherwise depend on their own initiative or foreign schools for further education.

If it would be possible for you to drum up even year-old magazines and send

(Continued on page 14)

(Continued from page 13)

them here, c/o American Embassy, you would be doing a good deed, indeed.

Please give this a bit of consideration and give my best regards to all our mutual friends. ABEL SORENSEN

c/o American Embassy
Djakarta, Indonesia

the Capitol dome

Dear Editor: Frederick Gutheim's WASHINGTON PERSPECTIVE *(July 1955 P/A)* on the Capitol compels the speculation as to what will happen when the last of the men like Lorimer Rich finally diasppears from the architectural scene. If he has been successful in his interview with Sam Rayburn, the profession and the country should owe him a vote of gratitude.

Egerton Swartwout's 1937 comments are historically interesting as an example of a type of architectural thought current a generation ago. The idea that the cast-iron dome was an imitation of stone and that it needed "visible" support seems to indicate that Swartwout did not realize that all Renaissance-type domes, from Michelangelo to the present, have depended on iron or steel to hold them in place. They are perhaps the prime example of the transition from masonry construction in compression and thrust retained by mass weight, to our present day construction in tension. "Visible" support has been one of the greatest psychological-esthetic hurdles the contemporary architect has had to clear. Though cast iron bolted together was not the final answer, the thought behind it is a direct ancestor of the thin shell concrete domes of today. The very fact that to men like Swartwout "It really has no visible means of support" is one of its most valuable characteristics to be preserved. The fact that it records the work of Thornton, Latrobe, and Bulfinch, that there is esthetic value in the "shallow court" and "soaring lines," are added reasons for preserving a monument which is not only a national shrine, but also an important link in the development of modern architecture. HARRISON GILL

Chattanooga, Tenn.

It had to be all three... with dignity

Flexibility to move quickly from one type of activity to another, and even more, to keep these activities together is the special desire of modern schools. Architects Bettenburg, Townsend and Stolte and Contractor Gene Hurley of St. Paul, Minnesota, chose Rilco laminated wood members for this elementary school gymnasium-auditorium building shown here. Wood was an acoustical, functional and economical choice.

Rilco arches saved time in construction and allowed for maximum use of uninterrupted space. Wood helped to contribute the desired atmosphere for all the functions of the all-purpose room.

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decay in draftsmanship?

Dear Editor: In 19 years of reading your magazine, I have never written your publication but tonight I must since I object to your recent P.S. column *(July 1955 P/A)*. It is admirable that you build up *your* Elmer Bennett and I admit his "graphic presentations" are good, but I wonder, could he produce a working drawing of a complicated detail from which a contractor could execute the work? I doubt it.

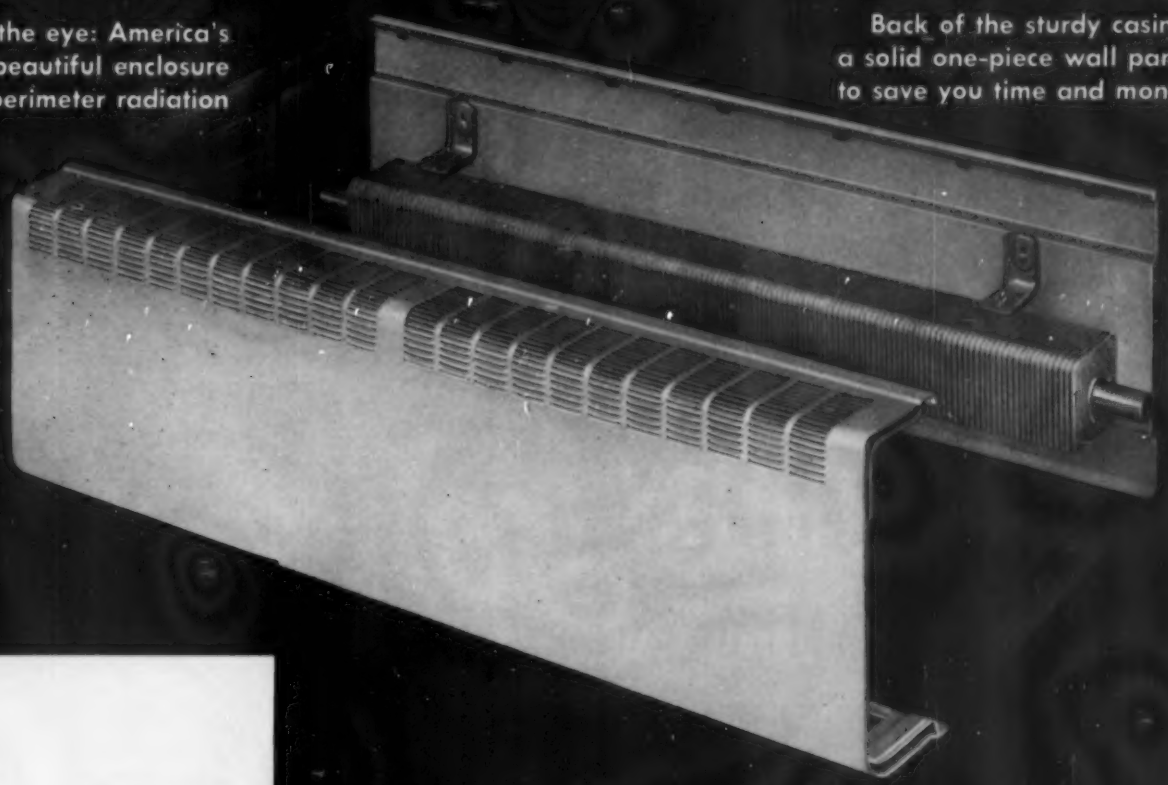
I disagree with your remarks about the "draftsmanship" of recent years *decaying*. From a study of the files of our office (going back some 50 years), I can prove that the *average* draftsmanship is *improving*. Oh! How I would enjoy debating this point with you. Being the

(Continued on page 17)

Sill-line: Beauty backed by VALUE

To the eye: America's most beautiful enclosure for perimeter radiation

Back of the sturdy casing: a solid one-piece wall panel to save you time and money



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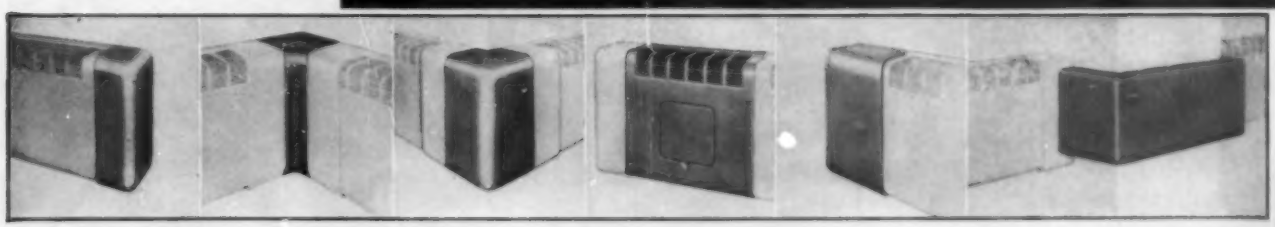
The heavier 16-gauge enclosure finished in baked enamel will forever remind you of its beauty and endurance. The standard one-piece back panel that covers raw walls and insures quick, rigid, true-alined installation more than pays its way in savings of time and face material.



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WRIGHT Rubber Floor Tile

(Continued from page 14)

Editor, you sir, have the advantage to say the least.

I realize this letter will wind up in your wastepaper basket but at least one of "your subscribers" *can draw* and objects to your theories expounded in your column. ROSS W. PURSIFULL

Dearborn, Mich.

Editor's note: *The quote about "decay in draftsmanship" was from the* Report of the Commission for the Survey of Education and Registration *set up by the AIA. Elmer Bennett produced many working drawings and details before he came with P/A, in the architectural offices of Hutchins & French, James H. Ritchie, James Gamble Rogers, and Lyon & Taylor.*

•

Dear Editor: Your P.S. in July 1955 P/A was very well written and extremely interesting. I am in agreement with your interpretation of the necessity for not only good draftsmanship but also intelligent and concise presentation. I believe that the architectural schools that belittle the necessity for thorough training in every phase of drawing and presentation are guilty of ivory tower "muddleheadiness." I believe it is just a convenient excuse for laziness. While drafting may be a trade, it is also our professional means of expression, and pride in our work goes hand in hand with good drafting.

I also agree that Elmer Bennett does a remarkably good job.

ALBERT MELNIKER

Staten Island, N. Y.

•

Dear Editor: I found your words on drafting most interesting. I don't think the situation is quite as simple as it appears. Certainly schooling can help, but it is really not the solution. I think that the demands for clean-cut drafting are relaxing, and if the demand established higher standards I don't think the drafting would be as bad as the cases you mention. I have been particularly fortunate; but there are always, as you have indicated, the questionable examples, and I can well believe that you must have some pretty grim examples pass over your desk. . . . I think that the enclosed good example, and in my opinion it is extraordinarily fine drafting (that of George Din), is something that is more than schooling. . . . I think that this is in the man rather than in his schooling.

I couldn't agree with you more on Elmer Bennett's work, and it is a good thing that he is given this public recognition. HENRY HILL

San Francisco, Calif.

•

Dear Editor: I felt I had to make a comment on your P.S. *(July 1955 P/A)* concerning the lack of good draftsmen coming out of the architectural schools. How can a man draw what he has not handled or put together? If these same men were to work in a lumber yard they would get to know the feel of materials they were trying to draw. I often look back and wish that I had taken a job as an assistant in some wood-working plant! Who got up the "White Pine Series"? Were they not craftsmen, cabinetmakers and shipwrights?

WILLIAM M. BISSELL

Bridgeport, Conn.

Editor's note: *Handsome draftsmanship of The White Pine Series, measured drawings of Early American architecture, was by Kenneth Clark, architectural photographer and delineator.*

microfilm records

Dear Editor: Recently while working on a building which required the addition of one story, I was plagued with the necessity of referring to multitudes of old plans and blueprints, which I am certain has been the experience of us all, at one time or another.

I was wondering if the idea had ever been conceived or employed to microfilm such plans and reduce to loose-leaf binder size?

In this manner easy reference, as well as quick, clean, and convenient procedure, could be followed.

I shall be interested to learn of P/A readers' reaction to this.

CREIGHTON SQUIRE

Montreal, Canada

the P/A cover

Dear Editor: For heaven's sake get a well-designed cover on the outside of your magazine. Your cover on PROGRESSIVE ARCHITECTURE is dull and monotonous. If Mondrian could see it he would turn over in his grave. HUBERT L. CULHAM

Toronto, Canada

Art Director's note: *I have tried to illustrate the "Progressive" part of P/A with a colored geometrical progression, one of the two major elements of the cover design. As a progression is a symbol of growth and, necessarily, the direct opposite to a static form, I fail to see the connection between the cover pattern—bad as it may be—and Mondrian. The painter in Mondrian was exclusively preoccupied with "equivalence," "equilibrium," and the "immutable." These are recurrent terms in his few writings where he plainly states that "the Neoplastic Art achieves tranquility through the balance of the duality, the individual and the universal." Outside of the fact that there should be a kind of metaphysical balance between Editors and Readers—a balance not presently expressed on the cover—it is possible that the author of the letter had in mind Malevich rather than Mondrian. It is Malevich, the exponent of the colored square, who said: "Due to the inflation of the square, the Art Exchanges provide everybody with the means by which he can create art. The production of a painting is made now so easy and so simple that no one can do better than order his work by telephone, while in bed, for the nearest house painter." I confess that so far I have been unable to use the telephone or a dictaphone for the production of the covers.*

STAMO PAPADAKI

Here's what Andersen C

1

Beauty

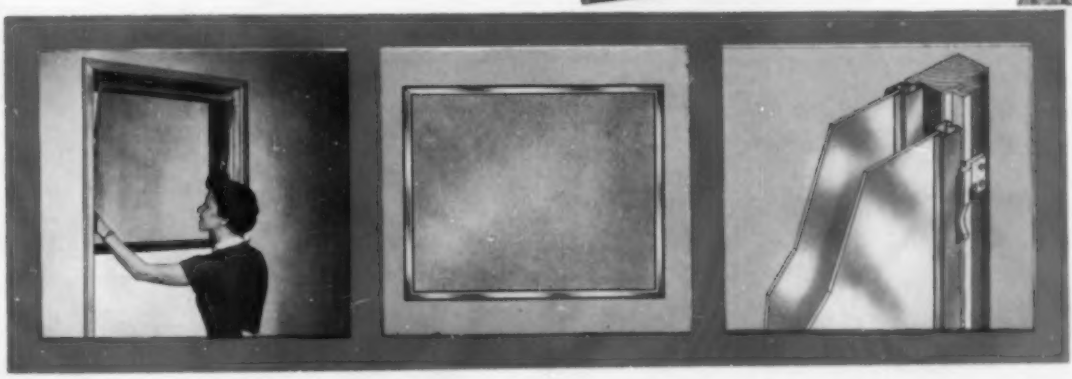
The attractive narrow lines of this sturdy wood unit make the new Andersen Self-Storing Combination Window the most smartly designed, the best looking combination you've ever seen. No longer need storms or screens detract from the appearance of homes. The Andersen Combination brings its own special window beauty and can be painted, if desired, to match house trim for perfect blending with any decoration or design.

Combination has to build

complete self-storing

2

No struggle. No strain. No fighting with storms or screens at spring and fall change-over time. Lower storm panel on the new Andersen Self-Storing Combination Window slides easily and effortlessly to top of the unit for storage during summer months. Can quickly be done from inside in a matter of seconds.



Screen panel easily removable. For winter storage screen panel can be left in place or can be stored in upper half of unit.

Full length screens are easily obtained with the Andersen Self-Storing Combination. Simply order an extra screen panel for the unit.

Triple glazing is possible when desired. All you do is order two extra upper storm panels and slip them into place on the unit.

Tops
in
beauty

Tops
in
convenience

38
sizes

FOR **ANDERSEN**
PRESSURE SEAL
UNITS AND MANY
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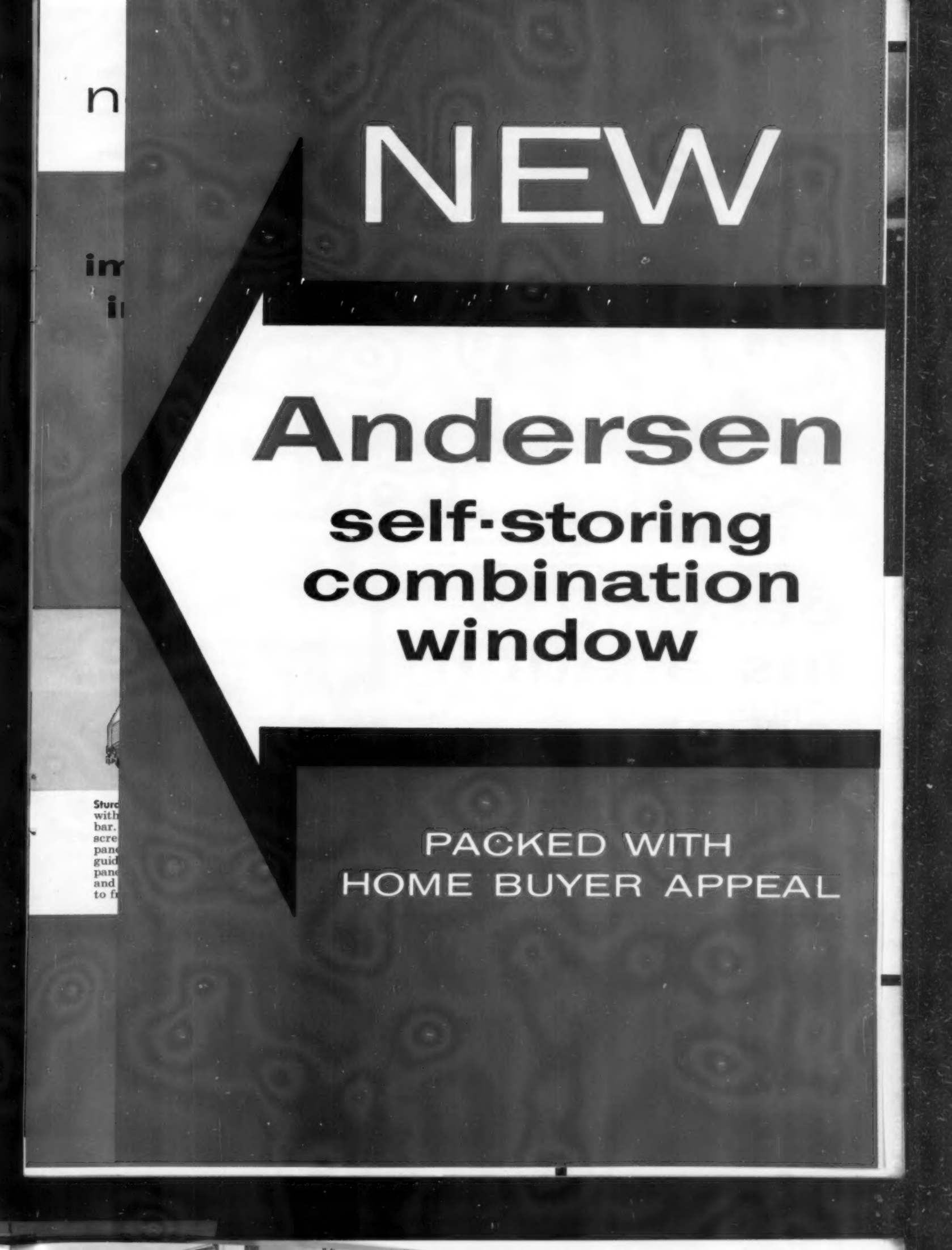
OPEN THIS SIDE FIRST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PACKED WITH
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new client appeal

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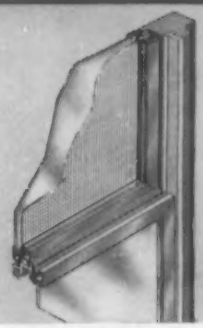
3

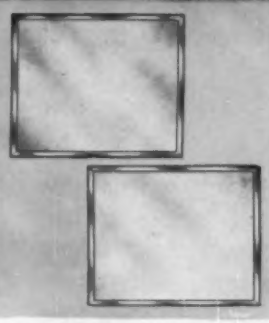
Fits Pressure Seals exactly! The new combination window is made to go with Andersen Pressure Seals. They team up to offer the best looking, most weathertight, most convenient double hung unit on the market.

Easy sash removability of all Andersen Pressure Seal Units makes the new Self-Storing Unit a doubly easy-to-use combination window. All panels can be removed, all cleaning can be done from inside the home.



Sturdy 1½" treated frame with aluminum center bar. Nylon strikes for screen and top storm panel installed. Plastic guide for bottom storm panel installed. Hangers and locks for applying to frame.

One screen panel. Panel has all-weather aluminum frame. Fasteners already applied at factory. Panels are wired with rugged Alclad aluminum screen cloth. Will withstand year 'round exposure.



Two storm panels. Each panel made of quality window glass set in narrow aluminum frame. Designed to be good looking, strong, yet light in weight to assure ease of handling whenever necessary.

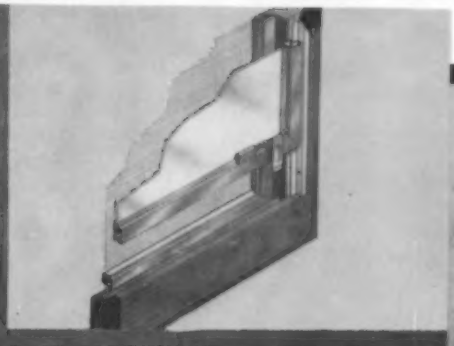
HEIGHT ↓ / WIDTH →	1'-8"	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"
3'-2"		x	x	x	x	x
3'-6"		o	o	o	o	o
3'-10"		x	x	x	x	x
4'-2"	x	x	x	x	x	x
4'-6"	x	x	x	x	x	x
4'-10"		o	o	o	o	o
5'-2"	x	x	x	x	x	x

There's a wide selection of sizes offered by the Andersen Self-Storing Combination Window. Just look over the size table. You'll find 28 sizes (*marked x*) designed to fit perfectly with Andersen Pressure Seal Units. What's more, you'll find 10 extra sizes (*marked o*) have been added to the line to make it adaptable to most modular stock size windows.

Andersen

No complicated installation problems. The Andersen Combination Window hangs just like any standard storm window or screen.

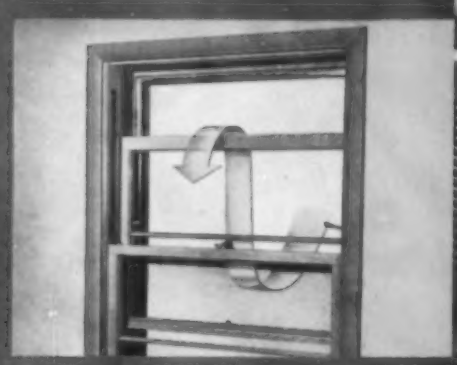
Cleaning and painting is a cinch. The entire window unit swings out for easy sill cleaning. Or you can lift unit off entirely for painting.



Plastic guides for bottom storm panel assure smooth and easy operation. No galling metal-to-metal contact. Panel slides at a touch.

4 easy installation easy operation

Get winter ventilation whenever desired. Lower storm panel on the Andersen Combination can be locked in your choice of five open positions.



Rainy weather ventilation is possible in summer time . . . and with no fear of water damage to furniture, floors or draperies.

All panels removable. Thanks to the easy sash removability of Pressure Seals, all screens and storm panels can be taken out, cleaned and stored any place homeowner wishes.

ANDERSEN CORPORATION
BAYPORT • MINNESOTA

Windowalls

TRADEMARK OF ANDERSEN CORPORATION

OCITY

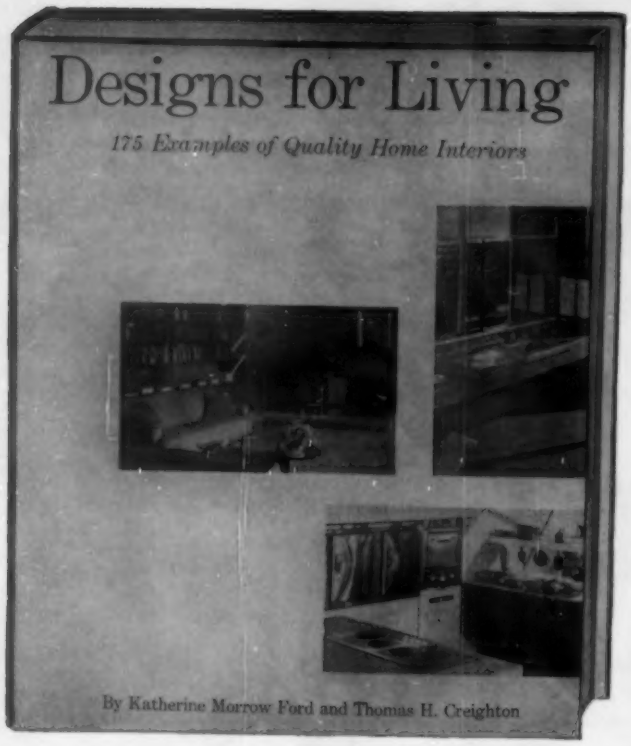
shows main
irst National Bank
raight line
nits blend
itectural design.
ail.

ity system also
nfort throughout
the second floor
n at left).
ail.

Dahl

Shafer

Co.



Here, at a glance, is the help you want to plan interiors which defeat today's high construction costs, by making the most of all spaces throughout a home.

Fascinating pictures and concise text give you hundreds of cost-saving, space-saving ideas you can apply now. And as a decorator, you can hand this book to your clients to illustrate your own ideas and suggestions for greater economy and new beauty.

No detail of possibilities from garden gate to rooftop has been overlooked. In covering all living and liveable space, the authors offer valuable new information on Space Relationships, Halls and Stairways, and Rooms for Special Activities.

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Never before has a book offered such complete and perfect guidance for the use of color in decoration. Mr. Birren gives you full understanding of the esthetic, psychological, physical, and functional aspects; gives all the answers you need for creating color effects for today's interiors, which are judged in terms of results as well as appearance.

He shows how color in a home can create restful graciousness, or how color in a store can promote sales, and the solution to many other similar problems.

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A new high in **HIGH VELOCITY**

The photograph above shows main banking floor of the First National Bank in Dallas. Note how straight line All-Air High Velocity units blend perfectly into the architectural design. *See next page for detail.*

The All-Air High Velocity system also provides draftless comfort throughout the bank as well as in the second floor executive offices (shown at left). *See next page for detail.*

Architect: George L. Dahl

Consulting Engineer:
Landauer, Guerrero & Shafer

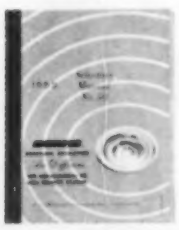
Contractor:
C. Wallace Plumbing Co.

Main banking floor

Sketch of photograph on preceding page shows the installation of twenty-four Anemostat 36-inch HPSL-100 High Velocity units, each supplying 200 cfm. A total of 4800 cfm is delivered to the main banking floor.

These pages illustrate the use of the Anemostat All-Air High Velocity distribution system in a modern air-conditioned bank. Anemostat High Velocity units are also being used throughout the country in many other applications such as hospitals, schools, department stores, office buildings and plants. • Here are some of the important architectural and engineering advantages of the Anemostat All-Air High Velocity distribution system. It can be used with smaller than conventional ducts. It can be installed faster and at less cost. It requires no coils, thus eliminates leakage, clogging and odors. Anemostat round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.

For latest data on Anemostat All-Air High Velocity units, write on your business letterhead for new Selection Manual 50.



Second floor executive offices

Diagrammatic ceiling view of offices on preceding page. This shows the installation of five Anemostat HPCM-1-100 High Velocity units, each supplying 125 cfm.

ANEMOSTAT®

DRAFTLESS *Aspirating* **AIR DIFFUSERS**

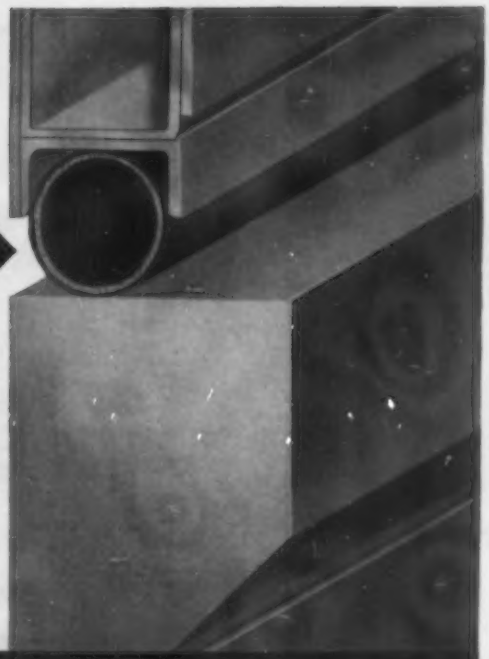
ANEMOSTAT CORPORATION OF AMERICA

10 East 39th Street, New York 16, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

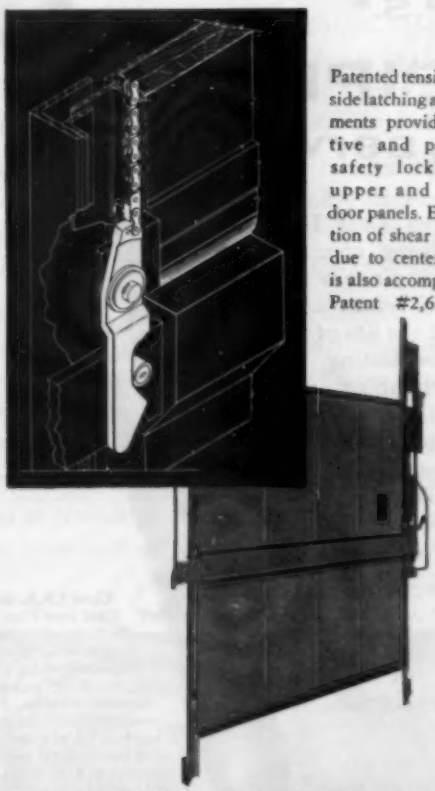
"No Air Conditioning System Is Better Than Its Air Distribution"

THE PEELLE SAFETY SEAL ASTRAGAL



Cross section at the meeting rail of the Peelle Freight Elevator Door showing the Peelle Safety Seal Astragal—a flexible tube of neoprene and asbestos. This eliminates the dangerous shear hazard of an overlapping steel astragal.

PREVENTS SHEARING ACCIDENTS
ON FREIGHT ELEVATOR DOORS



Patented tension dual side latching arrangements provide positive and parallel safety locking of upper and lower door panels. Elimination of shear hazard, due to center latch, is also accomplished. Patent #2,659,457

Here is the greatest safety advance in freight elevator doors since the introduction of the electric interlock. The Peelle Safety Seal Astragal completely eliminates the danger of sheared fingers by an overlapping steel astragal which, until recently, was necessary on all bi-parting freight elevator doors bearing the Underwriters' Laboratories label. Now both Underwriters' Laboratories and Factory Mutual Laboratories have approved the use of the Peelle Safety Seal Astragal on Peelle Doors with 1½ hour rating.

Peelle Freight Elevator Doors, equipped with Peelle Safety Seal Astragals, are now being used by Eastman Kodak Company, Aluminum Company of America, United States Rubber Company, American Cyanimid Company, Goodrich Tire & Rubber Company, General Analine & Film Company, the Consolidated Edison Company and many others.

Peelle Safety Seal Astragals may be installed on Peelle Freight Elevator Doors now in use and can also be applied to any other Peelle Bi-Parting Horizontal or Vertical Sliding Doors.

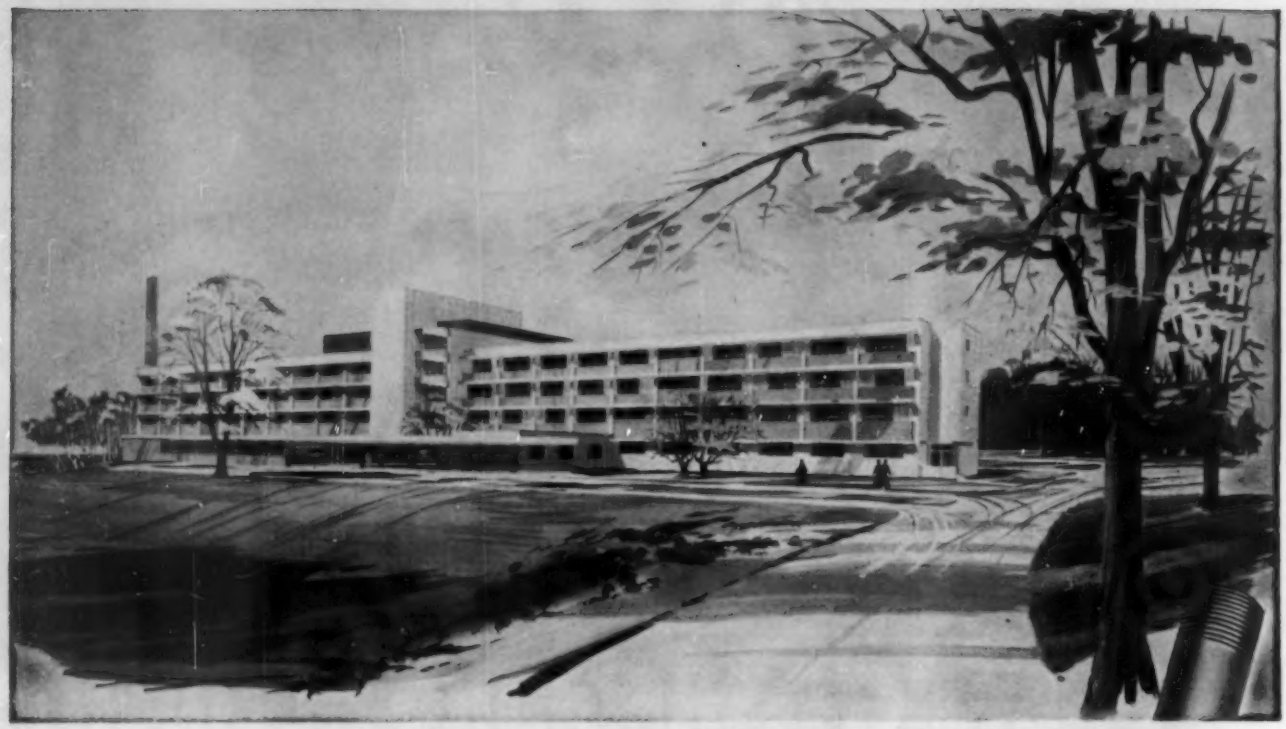
Write for details.

MOTORIZED DOORS SPEED UP ELEVATOR SERVICE

THE PEELLE COMPANY • 47 Stewart Avenue, Brooklyn 37, N. Y.

Offices in Principal Cities

PEELLE MOTORSTAIRS • INDUSTRIAL DOORS • FREIGHT ELEVATOR DOORS • DUMBWAITER DOORS



ROCKFORD MEMORIAL HOSPITAL, ROCKFORD, ILLINOIS
ARCHITECTS: HUBBARD & HYLAND, ROCKFORD AND PERKINS & WILL, CHICAGO.
CONSULTING ENGINEERS: E. R. GRITSCHKE, CHICAGO.
PLUMBING CONTRACTORS: ROCKFORD INDUSTRIES, ROCKFORD.

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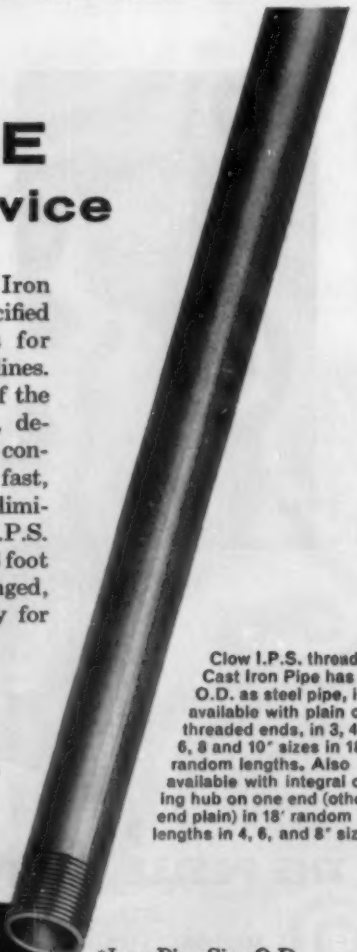
The modern 237-bed Rockford Memorial Hospital, at Rockford, Illinois, is typical of institutions dedicated to the safeguarding of community health. Nowhere is the demand for fast, sure elimination of waste more important than in hospitals and institutions set apart for the service of mankind.

In this new hospital, Clow I.P.S. threaded Cast Iron Pipe is used throughout for downspouts, drains, and waste lines. Corrosion-proof Clow I.P.S. Pipe assures long lasting, trouble-free service.

Clow I.P.S. threaded Cast Iron Pipe is constantly being specified by architects and engineers for downspouts, vent and waste lines. They know it will last the life of the building and will give lasting, dependable service. Plumbing contractors know installation is fast, economical and, once installed, eliminates maintenance costs. Clow I.P.S. Cast Iron Pipe is available in 18 foot random lengths; threaded, flanged, hub or plain end. Write today for complete information.



Clow I.P.S. threaded Cast Iron Pipe has same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8 and 10" sizes in 18' random lengths. Also available with integral calking hub on one end (other end plain) in 18' random lengths in 4, 6, and 8" sizes.

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*Iron Pipe Size O.D.

Look what's happened to laundry tubs!...

Vibrin

With modern basements being used for dens, play rooms, and party areas, even the lowly laundry tub has finally gotten a "new look"...a *Vibrin* "look"!

Lighter! This new tub of reinforced VIBRIN polyester weighs only about *1/10th as much* as conventional laundry tubs—is easier and less costly to ship and install as a stationary unit—even allows mounting on a *mobile base!*

More attractive! Beautiful pastel shades are *molded right in*...can't fade, chip, or scratch off. Party designs, too, can be molded into these double-duty home fixtures—just right for storing ice cubes and cold beverages.

Extremely durable! The tough reinforced VIBRIN is actually *stronger than steel* for its weight—won't dent, rust, chip, warp, crack, or craze! Of course, it's unharmed by soaps, detergents, starches, bleaches, hot water, and such agents normally encountered in household use.

What's more, its smooth *non-porous* surface can't harbor dirt or germ-life. It's *completely sanitary,* complying with the latest sanitary codes.

Yes, the same thing has happened to *laundry tubs* that has happened to *sport-car bodies, luggage, furniture, bath tubs, pipe, paneling, aircraft radomes, fishing rods, and many* of today's truly modern products. They've been *made* modern with VIBRIN.

Better investigate Vibrin. And look for VIBRIN in *other* products. It's a sure sign of modern quality.

Laundry tubs of Naugatuck VIBRIN® by Gray-Wilson Corp., Detroit, Mich., molded by Waterbury Companies, Waterbury, Conn. and Camfield Fiber Glass Plastics, Inc., Grand Haven, Mich.

Naugatuck Chemical

Division of United States Rubber Company
Naugatuck, Connecticut

BRANCHES: Akron • Boston • Gastonia, N.C. • Chicago • Los Angeles • Memphis • New York • Philadelphia • IN CANADA: Naugatuck Chemicals, Elmira, Ontario
Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices • Cable Address: Rubexport, N. Y.

Owens-Illinois super-clear Glass Block are available in 12" size (No. 470 illustrated) and 8" size.

Now Available–

THE INSULATING BLOCK YOU CAN SEE THROUGH

in 12-inch size

Now, you can design in full vision with the insulating efficiency of an 8" brick wall. Air conditioning and heating costs will be lower, too. Glass block panels are hard to break, easy for any mason to install using ordinary tools.

Owens-Illinois super-clear Glass Block No. 470 are one of the five designs in our Architectural Line. Among other designs available are random clear that permit partial vision, prismatic light-directing and solar selecting glass block that restrict sight completely and flood rooms with diffused daylight.

• • •

Write for the information you want to: Kimble Glass Company, subsidiary of Owens-Illinois, Toledo 1, Ohio.

OWENS-ILLINOIS GLASS BLOCK
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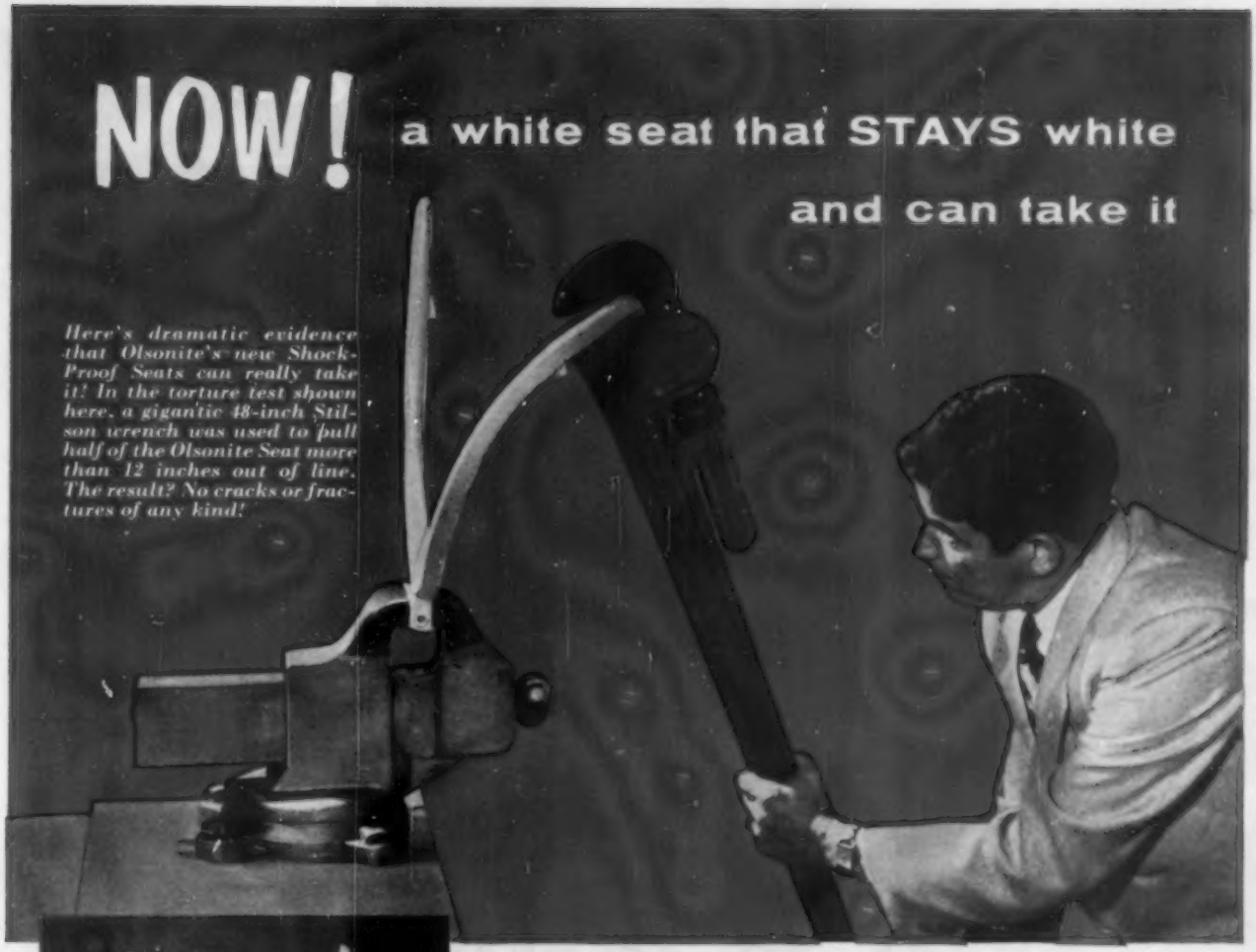
OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

NOW! a white seat that STAYS white and can take it



Here's dramatic evidence that Olsonite's new Shock-Proof Seats can really take it! In the torture test shown here, a gigantic 48-inch Stillson wrench was used to pull half of the Olsonite Seat more than 12 inches out of line. The result? No cracks or fractures of any kind!

In addition to the regular bowl model (#5) and elongated bowl (#10), the amazing new Olsonite Shock-Proof industrial and commercial seats are available with a concealed check hinge (#5CC and #10CC) made entirely of non-corrosive metal. A lug on the hinge posts locks against cutaway on insert in extended seat back, preventing the seat from being raised to more than 11° beyond perpendicular.

A-4

NOW YOU CAN SPECIFY WHITE SEATS for all industrial and public toilet installations—white seats that won't fade or "yellow" for a lifetime of normal use!

With the new Olsonite White Shock-Proof Seats, it's easier to keep that clean, sanitary appearance than with black seats. Shock-Proof Olsonite Seats have also proven their ability to withstand shocks 5 times greater than ordinary solid one-piece seats. Even deliberate abuse in public toilets and industrial installations won't crack, chip or break Olsonite Shock-Proof Seats—and they won't absorb water.

Like all Olsonite Seats, Shock-Proof models are solid one-piece construction—there is no applied finish to crack or peel. They are sanitary white *all the way through*. Be sure to specify the seat that *stays white*—the seat that can "take it" without damage for a lifetime of normal use—Solid Olsonite Shock-Proof Seats.

Olsonite's complete catalog is available on request. Please write on your letterhead to:

SOLID Olsonite SEATS

ORIGINATORS OF THE SOLID PLASTIC SEAT

Olsonite Shock-Proof Models Are Available In White or Black

SWEDISH CRUCIBLE STEEL COMPANY

Plastics Division, 8561 Butler Avenue, Detroit 11, Michigan

Aquadam

asbestos smooth-surfaced

Built-Up Roofs

for deck inclines from dead level to ½" per foot

The new Johns-Manville Aquadam asbestos smooth-surfaced built-up roof has been especially designed to give the best possible protection to a building and its contents.

The Aquadam Asbestos Smooth-Surfaced Roof Specification, like the recently announced J-M Aquadam Slag-Surfaced Specification, owes its superiority to Aquadam—a bituminous asphalt cementing agent developed exclusively by Johns-Manville and employed in the application of the roofing felts.

J-M Aquadam provides these important advantages

- **greater weather resistance**
- **greater resistance to cracking**
- **improved self-healing properties**
- **greater kettle stability**
- **greater adhesion**
- **stronger bond**
- **greater resistance to water**
- **excellent uniformity**

In the Aquadam Asbestos Smooth-Surfaced Roof Specification all the qualities of Aquadam are combined with the time-proven advantages of asbestos felts in smooth-surfaced built-up roof construction.

For complete information about Aquadam Built-Up Roofs, see your Approved Johns-Manville Contractor. He's listed in the classified telephone directory. Or write Johns-Manville, Box 158, New York 16, N.Y. In Canada, 565 Lakeshore Rd. East, Port Credit, Ont.

See "Meet the Press" on NBC-TV, sponsored on alternate Sundays by Johns-Manville

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Irregular shaped ceilings often posed difficult lighting problems ...until GrateLite was invented. This is a louver that can be fitted to any shape!

results:

A new concept of ceiling design that distributes the light evenly throughout the room without glare and annoying shadows—an inviting, eye-soothing illumination of high intensity at low brightness.

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Beauty treatment for odd-shaped ceilings...

GUTH GRATELITE*

LOUVER-DIFFUSERS

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THE EDWIN F. GUTH COMPANY
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Do your schools have money

WASTED FUEL DOLLARS SAVED BY HERMAN NELSON DRAFT|STOP SYSTEM GIVE YOU CLASSROOM COMFORT "FOR FREE".

IF you're depending on open windows for classroom cooling and ventilation, you do *have money to burn!* It's the fuel dollars spent for unneeded heat—heat that is literally "tossed out the window" in an effort to bring classroom temperatures down to comfort level.

Herman Nelson DRAFT|STOP lets you keep both windows and heating costs down through balanced two-way temperature control. It heats only when heat is needed. When your "free heat" sources—sun, lights and students—take over, this system assumes the function of cooling, introducing outdoor air in sufficient quantities to maintain classroom temperature at comfort level. And, to make this fuel saving complete, the Herman Nelson method of draft elimination functions without using costly heat.

Comfort and cash savings—let Herman Nelson prove how easy it is to have both. For complete information, see our catalog in Sweet's Architectural File, or write Herman Nelson Unit Ventilator Products, American Air Filter Co., Inc., Louisville 8, Ky.

NEW YORK. With today's critical classroom shortage, this room represents a perfect example of low cost modernization. Even with windows closed and curtains drawn, a Herman Nelson DRAFT|STOP Unit Ventilator keeps this Audio-Visual demonstration classroom at New York University properly cooled and ventilated. Installation includes new Light|Stop Curtain Accessory (see inset) which prevents curtain from billowing due to discharge air from unit ventilator, thereby eliminating distracting light streaks. Co-chairmen National Committee on Buildings and Equipment, Department of Audio-Visual Instruction of the N.E.A.: Dr. A. J. Foy Cross and Dr. Irene Cypher; Architects: Eggers and Higgins.

DRAFT STOP

Provides

COOLING, HEATING
VENTILATION, ODOR CONTROL
DRAFT ELIMINATION

All at minimum cost

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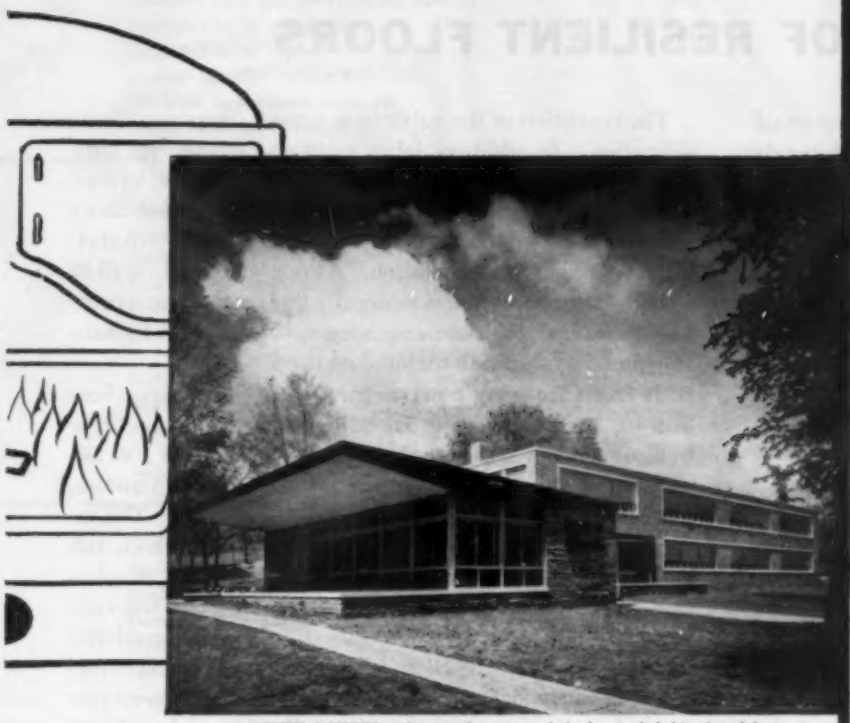
UNIT VENTILATOR PRODUCTS

AMERICAN AIR FILTER COMPANY, INC.

SYSTEM OF
CLASSROOM COOLING, HEATING AND VENTILATING

to burn?



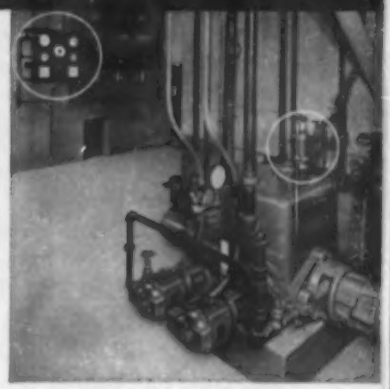
SOUTH DAKOTA. Large glass areas help insure bright, cheerful classrooms—but cooling, heating and ventilating functions at Lincoln Grade School, Yankton, S. D., are assigned to dependable, efficient Herman Nelson DRAFTSTOP Unit Ventilators. Superintendent of Schools: L. H. Baumann; Architects: Hugill, Blatherwick & Fritzel; Engineers: G. M. Orr Engineering Co.; Mechanical Contractor: Freeman Corporation.

ILLINOIS. Helps them to concentrate in comfort. No chilling drafts — no interruptions from opening and closing windows. Herman Nelson Unit Ventilators meet classroom cooling, heating and ventilating requirements every season of the year at Solomon School, Chicago, Ill. Superintendent of Schools: Benjamin Willis; Architect: John C. Christensen; Engineer: Joseph T. Fatz, Sr.; Mechanical Contractor: Dearborn Plumbing & Heating Service, Inc.

OTHER

AAF

herman nelson SCHOOL PRODUCTS



TUNES IN WITH THE WEATHER!

Illinois Selectotherm — an automatically controlled high vacuum steam heating system which through single dial control, balances heat supply against heat loss in many school spaces. Ask for Bulletin 540.

SHORT CUT TO BIG SAVINGS!

Herman Nelson renewable AMER-glas filter combines the best features of a permanent filter with the time and money-saving advantages of a replaceable filter. Just four easy steps and the classroom filter is restored to its original efficiency.

1. Remove the aluminum filter frame from the unit ventilator and dispose of soiled media.

2. Pull out desired length of clean AMER-glas media from self-dispensing carton and cut with scissors.

3. Insert the clean filter media in the frame and lower hinged top into position.

4. Replace the filter frame in the unit ventilator. It's ready to go!

AMERICAN AIR FILTER CO., INC.
Dept. PA-9
Louisville 8, Kentucky

I would appreciate receiving literature describing the following products—

- ☐ Classroom Unit Ventilators
- ☐ **illinois** Selectotherm
- ☐ Renewable **AMER-*glas*** filters
- ☐ Dust Control for Woodworking Shops

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A short survey of today's

RELATIVE COSTS OF RESILIENT FLOORS

Today's resilient floors are available in a wide range of price categories. Generally speaking, their cost depends on two factors. First, the price of the flooring material itself, and second, the many considerations frequently involved in installing the floor.

Material costs vary. The chart on the opposite page shows the installed cost ranges of the different types of resilient flooring materials. Asphalt tile is the lowest in cost, with the "A" or darker colors the most economical. The most expensive—and lighter—"D" colors of asphalt tile are about equal in cost to the lighter gauges of linoleum. Further up the price scale are Excelon Tile, standard and heavy gauges of linoleum, Corlon vinyl-plastic sheet flooring, cork tile, rubber tile, Linotile, and Custom Corlon Tile, in that general order. Differences in gauge, color, and styling within a resilient flooring line all have a bearing on cost.

Other factors influence final cost. In addition to the price of the material itself, other considerations which may have a bearing on the cost of installation affect the final cost of a floor. For this reason, the Armstrong Cork Company, as manufacturers of resilient floors of every type, cannot safely quote precise installed prices. Those listed opposite are therefore approximate.

The condition of the subfloor is often an important consideration. In addition, labor rates and efficiencies vary greatly from one section of the country to another, as well as from job to job. Naturally, too, costs of resilient floors differ widely depending upon the amount of custom styling involved in the installation. A floor laid wall to wall in a single color or styling is generally less costly than a complex custom styled floor requiring exceptional craftsmanship and fine attention to detail on the job.

Bids from flooring contractors. An outright specification for Armstrong material will still insure competitive bidding inasmuch as the Armstrong Line of floors is available to most legitimate flooring contractors. Furthermore, it will assure your client of top-quality materials. The invitation to bid should indicate all the items which fall within the scope of the flooring contractor's work in addition to the flooring materials themselves. The sub-contractor's ability and reputation should then be considered by the architect or the client in determining the best value.

When fairly accurate costs are required prior to receiving bids, it is suggested that you call on your Armstrong representative for assistance. By determining the various factors involved, he can help you work out an approximate cost of the proposed flooring that will be accurate enough for estimating purposes.

Floor designs can be effective without increasing the cost of the installation. This floor of Armstrong Rubber Tile is an example. Three colors were used in a simple diagonal design.

Elaborate custom styling such as in this floor of Armstrong Linoleum requires intricate cutting and fitting. The labor involved can add considerably to the cost of the installation.

Armstrong FLOORS

LINOLEUM PLAIN, JASPÉ, SPATTER®, TEXTELLE*, DECORAY*, RAYBELLE®, ROYELLE®, MARBELLE®, NEWRAY* INLAID, CRAFTLINE® INLAID, EMBOSSED INLAID, STRAIGHT LINE INLAID

Approximate installed prices per square foot

(Over concrete, minimum area 1000 square feet)

Asphalt Tile, 1/8"—Group A, Group B Linoleum, light gauge—Marbelle, Decoray Asphalt Tile, 3/16"—Group A Asphalt Tile, 1/8"—Group C Asphalt Tile, 3/16"—Group B Linoleum, light gauge—Newray Asphalt Tile, 1/8"—Group D	20¢ to 35¢
Linoleum, standard gauge—Plain, Jaspé, Raybelle, Royelle, Marbelle Asphalt Tile, 3/16"—Group C Excelon Tile, service gauge Linoleum Tile, standard gauge Linoleum, standard gauge—Craftline, Straight Line, Embossed, and Plain (Special Colors) Battleship Linoleum, 1/8" Greaseproof Asphalt Tile, 1/8" Asphalt Tile, 3/16"—Group D	35¢ to 45¢
Corlon—Terrazzo, Decoresq, Moresq Linoleum, 1/8"—Marbelle, Jaspé Linoleum, 1/8"—Textelle Linoleum, 1/8"—Plain (Special Colors) Cork Tile, 1/8" Excelon Tile, 1/8"	45¢ to 60¢
Corlon—Granette Rubber Tile, 1/8" Cork Tile, 3/16" Linotile, 1/8"	60¢ to 70¢
Flagstone Asphalt Tile, 1/8" Custom Corlon Tile, 3/32" Cork Tile, 3/16" Rubber Tile, 3/16" Custom Corlon Tile, 1/8"	70¢ to 90¢
Top-Set Asphalt Cove Base, 4" and 6" Top-Set Rubber Cove Base, 4" and 6"	35¢ to 50¢ per lineal foot

ARMSTRONG CORK COMPANY makes all types of resilient floors for all types of interiors. Almost any flooring problem can be met with one or more of the floors in the Armstrong Line. As a result, we have no special bias toward any one type and can offer architects impartial recommendations on any flooring problem. Our main interest is to aid you in making a sound selection.

Armstrong sales representatives throughout the country will be glad to consult with architects and make specific recommendations for individual jobs. Your Armstrong representative has a wide variety of experience and training in resilient flooring and can also call upon the Armstrong Research and Development Center for assistance with special problems.

For helpful information on any flooring question, just call your nearest Armstrong District Office or write direct to Armstrong Cork Company, Floor Division, Lancaster, Pa.

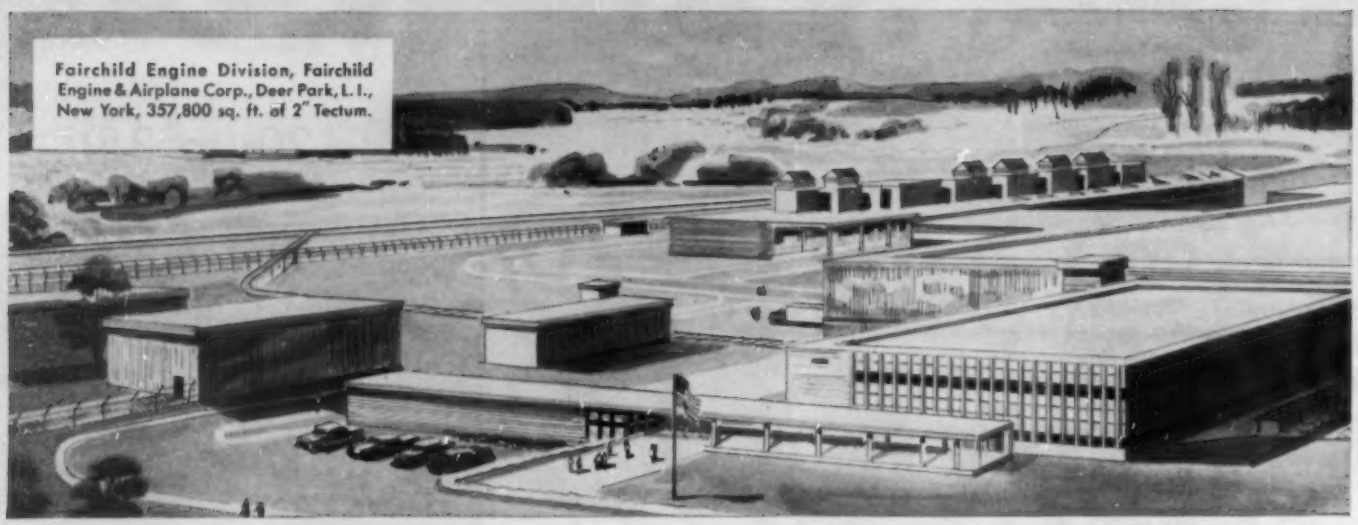
PLASTICS

CUSTOM CORLON® TILE
EXCELON® TILE
MORESQ* CORLON
DECORESQ® CORLON
GRANETTE® CORLON
TERRAZZO* CORLON

RESILIENT TILES

ASPHALT TILE
Standard
Greaseproof
Flagstone*
Conductive
RUBBER TILE
LINOTILE®
CORK TILE
CUSTOM CORK TILE
LINOLEUM TILE

* Trade-Mark



Fairchild Engine Division, Fairchild Engine & Airplane Corp., Deer Park, L. I., New York, 357,800 sq. ft. of 2" Tectum.

INDUSTRY EXPANDS WITH

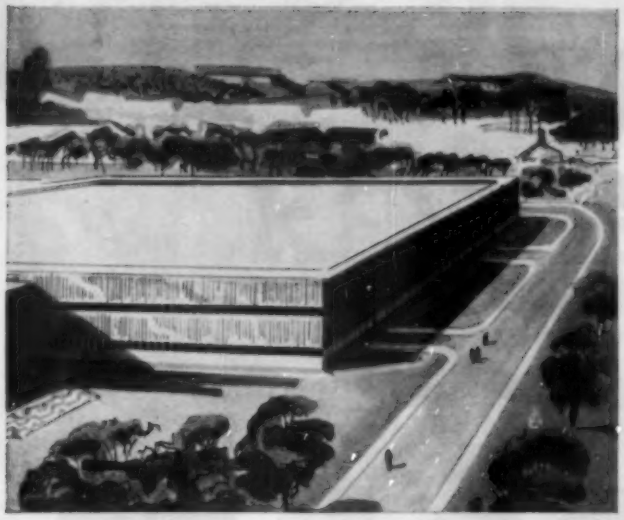
solves many problems in

(above) Tectum wall insulation erected with any of several fastening methods conceals girts. Available in 2" x 30" and up to 120" long. Interior and exterior walls can be erected simultaneously.

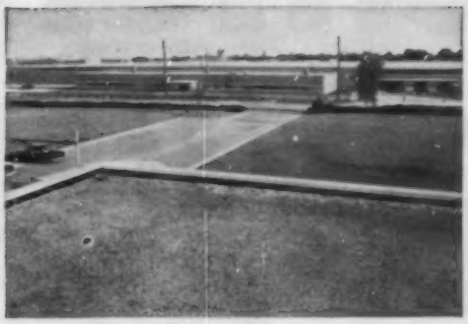
(right) Tongued and grooved Tectum deck with factory applied roofing felt can be quickly laid on any type of framing. Built-up roofing may be applied immediately. Available in four thicknesses and eleven standard sizes.

Tectum®

THE NINE-VALUE BUILDING MATERIAL



The Wesleyan University Press Inc., Columbus, Ohio, 125,883 sq. ft. of 2" Tectum plank for roof deck.



Simmons Mfg. Co., Columbus, Ohio, 222,243 sq. ft. of 2" Tectum plank and 16,302 sq. ft. of 3" Tectum plank for roof deck.

TECTUM...

Austin-designed plants

The Austin Company, pace-setters in design and construction of industrial plants used nearly 1 million sq. ft. of Tectum for roof decks and wall insulation in these six buildings.

Why? Because Tectum provides a combination of properties in a single material which raise quality, comfort and convenience while keeping costs low.

Noncombustible Tectum has insulating and acoustical treatments built right in. Its textured surface adds a decorative note to building interiors which may be painted time and time again without decreasing acoustical efficiency. Lightweight and ease of handling speed erection.

Find out how this versatile product may be used in your next building. Mail the coupon below today for application details, or call your Tectum distributor.

Parish Pressed Steel Division of Dana Corporation, Reading, Pa., 19,244 sq. ft. of 2" Tectum plank for wall insulation.

Clark Equipment Company, Construction Machinery Division, Benton Harbor, Mich., 45,630 sq. ft. of 2" Tectum plank for wall insulation.

TECTUM DIVISION
100 South Sixth Street, Newark, Ohio

Please send Technical Data

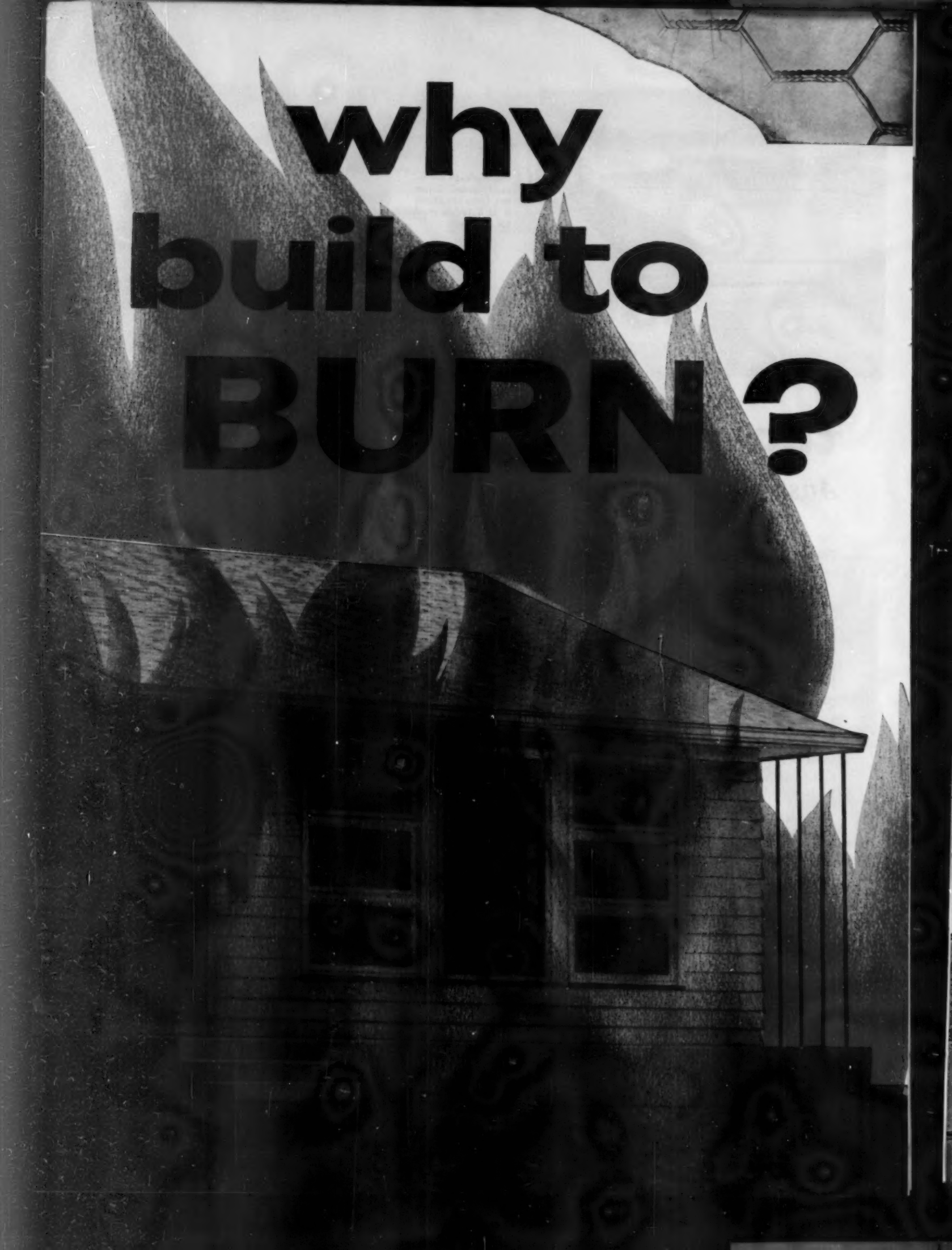
☐ I am interested in roof decks
☐ I am interested in wall insulation

Name _____ *Title* _____

Address _____

City _____ *Zone* _____ *State* _____

Worthington Corporation, Decatur, Ala., 49,632 sq. ft. of 2" Tectum plank for wall insulation. 13,955 sq. ft. of 3" Tectum plank for roof deck.


why
build to
BURN?

KEYMESH

GALVANIZED REINFORCING LATH

with gypsum lath and plaster multiplies fire resistance of buildings

Fire safety costs so little.

Actually, walls and ceilings of gypsum lath and plaster, reinforced with Keymesh, cost less than most substitutes. Just see how they *multiply* fire safety.

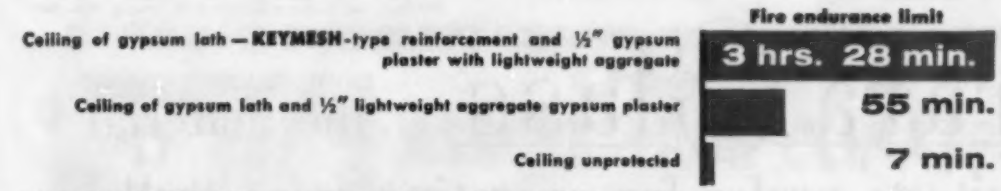
Take open-web steel joist floors and concrete slabs with gypsum ceilings, for example. With ½ inch of lightweight aggregate plaster, reinforced with Keymesh-like lath, a fire endurance limit of 3 hours and 28 minutes was obtained.*

Without reinforcement, the limit was 55 minutes. *Keymesh* adds 2 hours and 33 minutes to the fire endurance limit because it holds the plaster in place. When lath and plaster were omitted, the fire endurance limit was only 7 minutes.

You'll find equally important protection when simple columns and beams of buildings are protected in this same way. It's so good that insurance companies cut their rates because of the greater fire safety. Actually, these lower rates quickly pay the cost of the lath and plaster.

Think of it. Greater fire safety. Acoustical properties, if you wish. Durability. Low maintenance. Beauty. Takes any decoration. Yet... this fire safe construction costs less than most substitutes. And it can slash insurance rates enough to quickly pay for the plastering.

*Actual Fire Test Shows Amazing Value of Keymesh-Type Plaster Reinforcement**

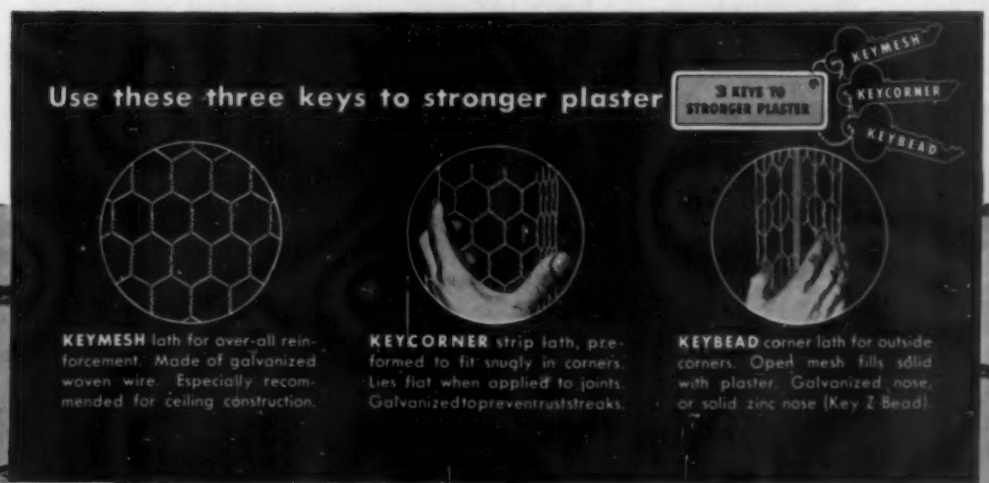

Fire endurance limit
Ceiling of gypsum lath — KEYMESH-type reinforcement and ½" gypsum plaster with lightweight aggregate
3 hrs. 28 min.
Ceiling of gypsum lath and ½" lightweight aggregate gypsum plaster
55 min.
Ceiling unprotected
7 min.

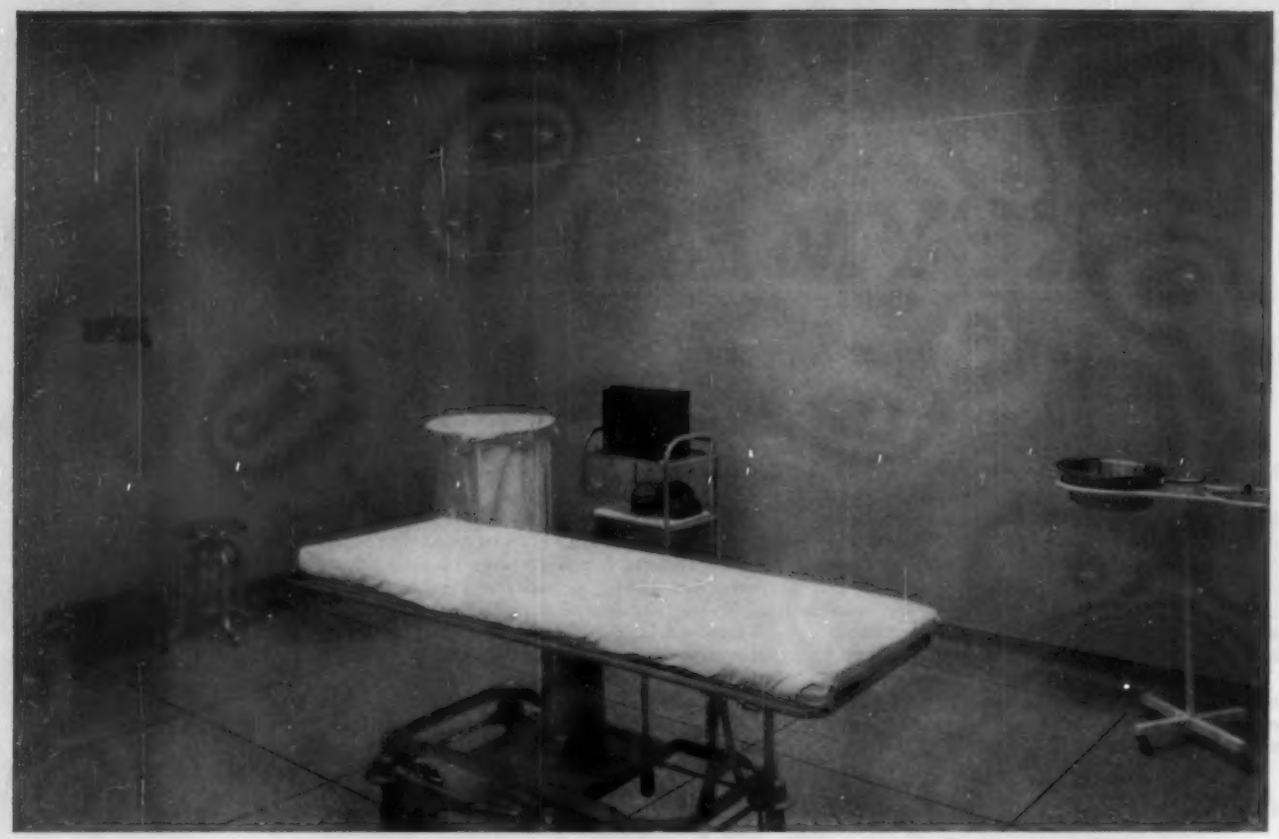
**See Building Materials and Structures Report 141, National Bureau of Standards: "Fire Endurance of Open-Web Steel-Joist Floors with Concrete Slabs and Gypsum Ceilings"*

KEYSTONE STEEL & WIRE COMPANY

PEORIA 7, ILLINOIS

makers of Keymesh • Keybead • Keycorner • Keystone Welded Wire Fabric
Keystone Nails • Tie Wire • Keystone Non-Climbable and Ornamental Fence


Use these three keys to stronger plaster
3 KEYS TO STRONGER PLASTER
KEYMESH
KEYCORNER
KEYBEAD
KEYMESH lath for over-all reinforcement. Made of galvanized woven wire. Especially recommended for ceiling construction.
KEYCORNER strip lath, preformed to fit snugly in corners. Lies flat when applied to joints. Galvanized to prevent rust streaks.
KEYBEAD corner lath for outside corners. Open mesh fills solid with plaster. Galvanized nose, or solid zinc nose (Key Z Bead).



Southwestern Michigan Tuberculosis Sanitorium.
Architects: Lee Black and Kenneth Black, Lansing, Michigan

Carrara® Glass ... the material architects prefer for operating room walls!

In specifying a material for the walls of operating rooms, a most important consideration is the maintenance of hospital standards of sanitation. That's why many leading architects prefer Carrara Glass for this application.

Carrara is all pure glass. Its smooth surface, mechanically ground and polished, offers no foothold to germs and bacteria. And the true, even joints between the large sections of Carrara discourage the collection of dust and dirt. In addition, the homogeneous structure of Carrara Glass gives it the ability to stand up under rigorous hospital cleaning without checking, crazing, staining; makes it impervious to the attacks of water, acids and cleaning compounds.

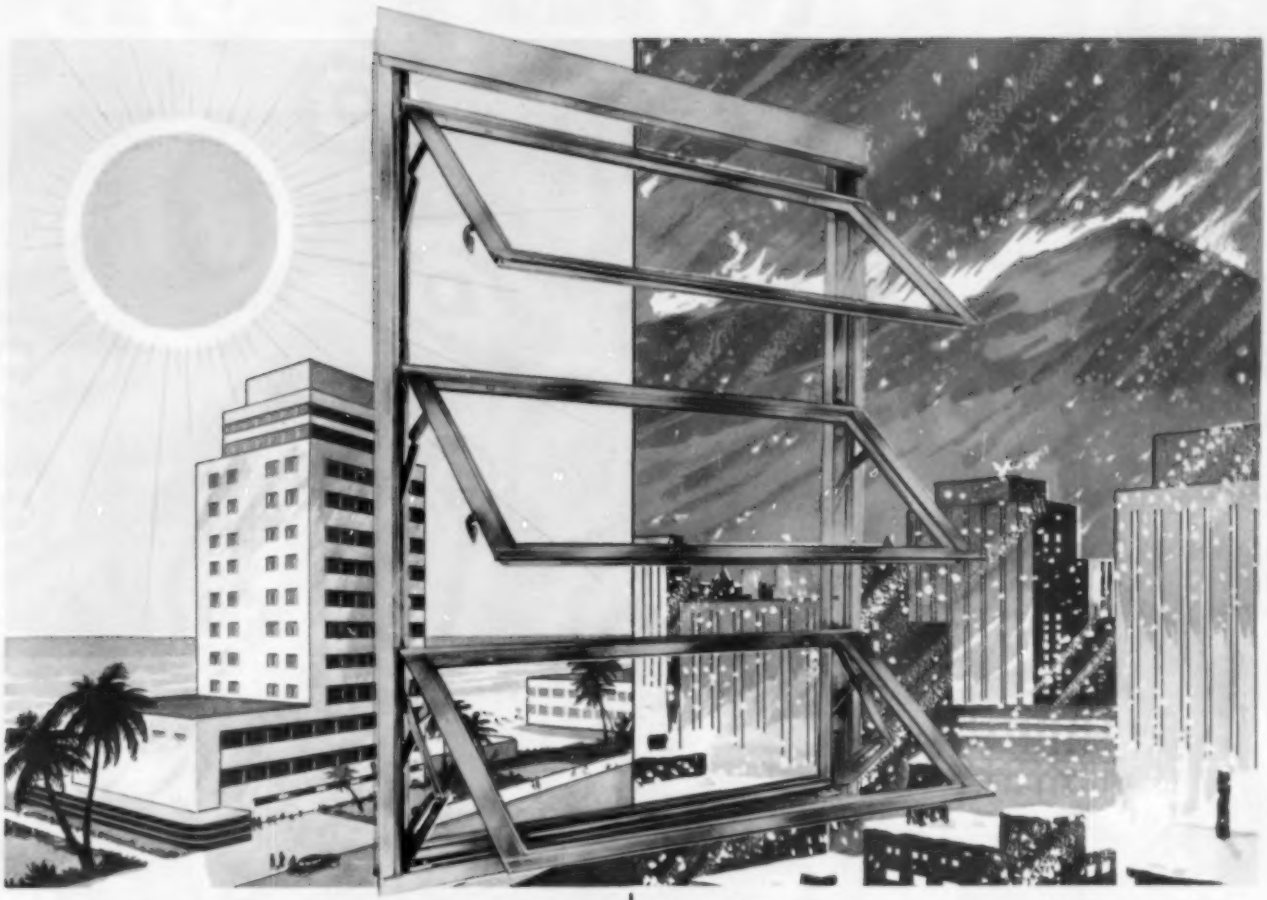
Carrara Glass is a beautiful material and contributes materially to the appearance of any room or structure. It comes in ten colors, many thicknesses. For more information, write to Pittsburgh Plate Glass Company, Dept. 5335, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

Carrara ... the quality structural glass

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED



BECAUSE LUDMAN LEADS IN WINDOW ENGINEERING

LUDMAN Auto-lok AUTOMATIC LOCKING WINDOWS

ASSURE TRUE CLIMATE-CONTROL

AS NO OTHER WINDOWS CAN!

SEALS TIGHTER THAN A REFRIGERATOR

TRUE CLIMATE-CONTROL takes full advantage of Nature's milder moods, yet protects against extremes of temperature. Because Auto-Lok Windows are engineered by Ludman to be the tightest-closing windows ever made .... because Auto-Lok Windows open wide to the breeze .... completely control ventilation .... **TRUE CLIMATE-CONTROL starts with Auto-Lok Windows!**

When Air-Conditioning or Heating units are operating, Auto-Lok Windows seal the heat or cold out .... seal the man-made weather in. A simple flip of a clip allows installation of storm windows (or screens), in an instant.

In mild weather, when windows are open, there is no equal to Auto-Lok. These famous windows provide complete control of ventilation. Both the quantity, and quality, of ventilation is controlled by Auto-Lok Windows, which open from the slightest crack of the exclusive Night Vent, to a full opening of all vents. Auto-Lok Windows can direct entering air .... provide fresh air, even when it's raining.

Because Ludman leads in Window Engineering, Auto-Lok Windows stand alone in performance, appearance, and endurance. Because only Auto-Lok Windows provide full control of ventilation .... because Auto-Lok Windows are the tightest-closing windows ever made .... they do both jobs required of a window for TRUE CLIMATE-CONTROL. Their many operating advantages, their long life, their rugged construction are still more reasons why so many leading architects specify Auto-Lok. **Ludman Engineering Research assistance is available to architects on request.**

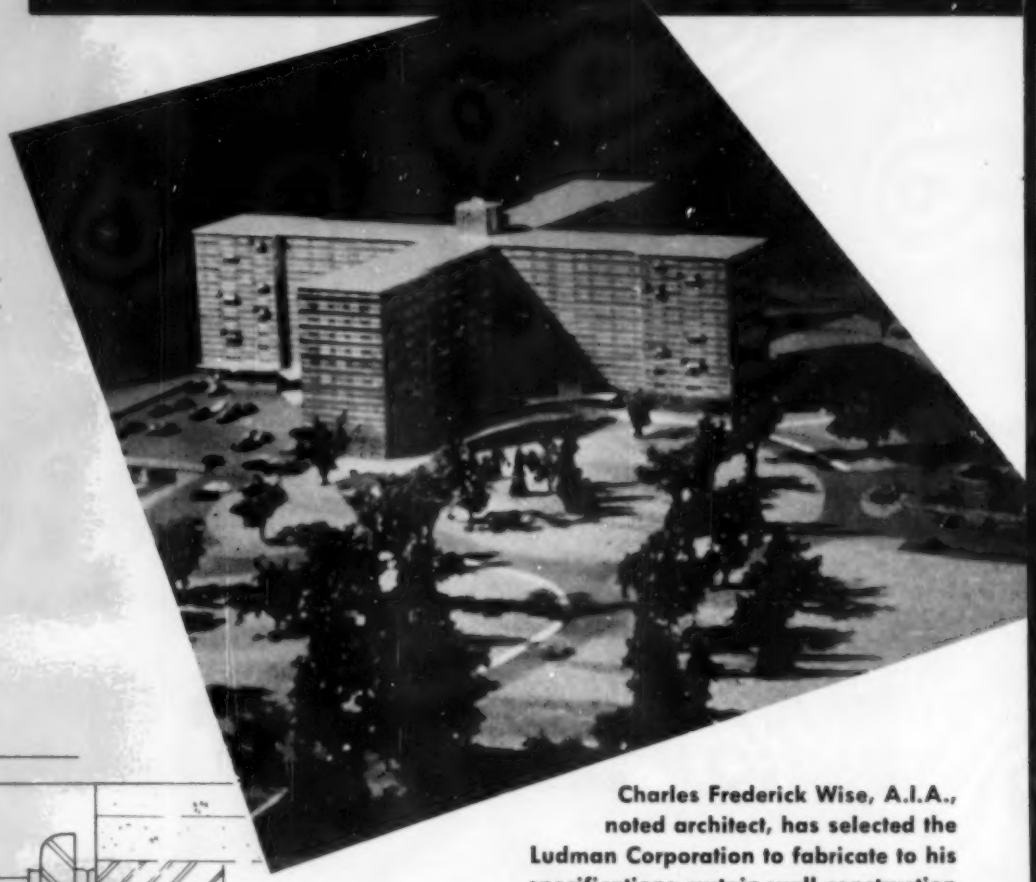
ONLY AUTO-LOK MEETS WHAT EXPERTS* AGREE ARE THE 10 MOST IMPORTANT REQUIREMENTS IN A WINDOW

*Geoffrey Baker and Bruno Funaro in "Windows in Modern Architecture"

LUDMAN Auto-lok

LUDMAN LEADERSHIP

IS HELPING ARCHITECTS

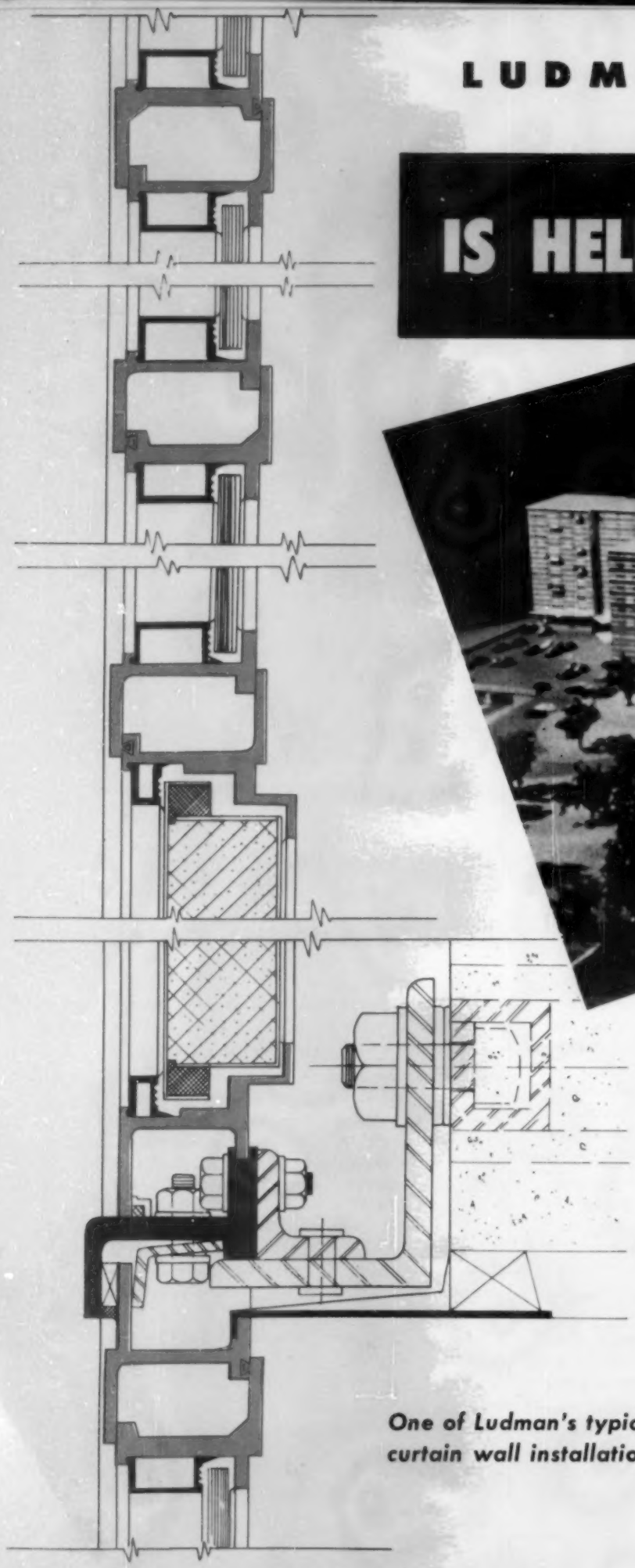


Charles Frederick Wise, A.I.A., noted architect, has selected the Ludman Corporation to fabricate to his specifications curtain wall construction for the new Chetwynd Apartments in Bryn Mawr, Pennsylvania.

Architect: Charles Frederick Wise, A.I.A., Bryn Mawr, Pa.

Structural Engineer: Severud-Elstad-Krueger, New York, N.Y.

Mechanical Engineers: Ginzburg and Smith, Philadelphia, Pa.



One of Ludman's typical curtain wall installation details.

Refer to SWEET'S FILE 16

Member of The Producers' Council, Inc.

IN WINDOW ENGINEERING

change the face of America

Skin-Wall . . . . Curtain Wall . . . . Panel-Wall . . . . these are tools that progressive architects are using to change the face of America. These are the newest methods of the 20th Century—**The Century of Construction.** They are the highly effective means by which architects are speeding up construction . . . . reducing costs . . . . increasing efficiency . . . . creating dynamic new beauty . . . . satisfying clients.

To assist the architect in benefiting from these new building techniques, LUDMAN Corporation is proud to present LUDMAN WINDOW PANELS . . . . *Another Development of Ludman Engineering.* Many architects, though tremendously interested in these newest building techniques, have had very little opportunity to become thoroughly acquainted with them. And because every architect either is, or will be, faced with the use of these new building methods, LUDMAN is making an Engineering Service available for consultation from the moment the first rough sketches come off the board. This service is available without cost to the architect.

Now, through the great versatility of LUDMAN WINDOW PANELS, an architect may be confident that he can realize any design he may create. For, on the basic principle of integral wall units that combine window and wall in one easily-handled, quickly-fastened (***see illustration***), labor-saving unit, LUDMAN Engineering Service can capture any wall treatment the architect may wish to execute.

Here are standard production components that are adaptable to any design the architect may create to solve his particular problem. This gives the architect complete freedom of design, while assuring construction at reasonable costs.

LUDMAN Window Panels are built to Ludman's usual high quality standards. Insulated panels, plus Ludman's tight-closing windows (the tightest closing windows ever made), produce a wall with an unusually low Thermal-Conductivity rating.

Let LUDMAN Engineers assist you in your work with this type of construction, or any fenestration problem. Utilize Ludman's knowledge . . . . gained through development and research . . . . in planning your next construction.

LUDMAN *Weatherstripped*

INTERMEDIATE ALUMINUM Projected Window

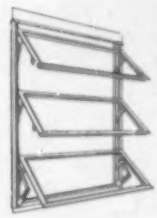
TESTED

10 TIMES TIGHTER
(AIR FILTRATION)
4 TIMES STRONGER
(UNIFORM LOAD)
4½ TIMES STRONGER
(HARDWARE LOAD)

Report on tests conducted by PITTSBURGH TESTING LABORATORY, Pittsburgh, Pa.

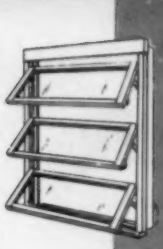
Ludman is proud to report that the results of the test by this highly respected testing organization prove again that Ludman has engineered a superior window product that will stand up under all conditions. This reflects Ludman's basic policy of thorough researching for each new product so that you can stake your reputation without hesitation on Ludman products.

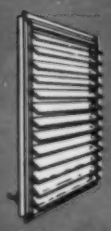
LUDMAN LEADS IN WINDOW ENGINEERING



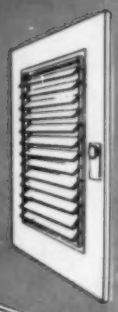
LUDMAN AUTO-LOK ALUMINUM AWNING WINDOWS
The window industry's most outstanding development . . . . the window that has solved so many of the architect's problems.

LUDMAN AUTO-LOK WOOD AWNING WINDOWS
The same Ludman quality . . . . the same tight closure . . . . available in wood windows through jobbers everywhere.





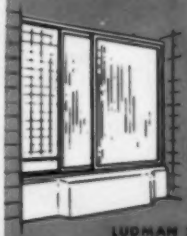
LUDMAN JALOUSIES
Ludman engineering has added more technical improvements to jalousie windows than any other company . . . . produced a jalousie you can specify with confidence.



LUDMAN JALOUSIES IN DOORS
Ludman engineered jalousies available also in doors.

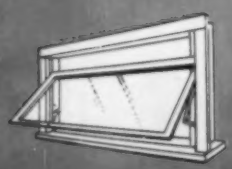
YOUR PRESTIGE IS REFLECTED IN THE PRODUCTS YOU SPECIFY

The architect, as do other professional men, cherishes his prestige . . . knows it as his most valuable asset. Fine products . . . products that look better . . . perform better . . . perform well and economically for the life of the building — these are major factors in supporting the reputation of the architect. And the best products cost so little more to install . . . cost so much less across the years. Protect *your* prestige when you specify!



LUDMAN ALL-WEATHER ALUMINUM SLIDING GLASS DOORS
Built to high Ludman standards . . . the only door so completely weather-tight as to be suitable for all climate use.

LUDMAN SHOWER DOOR TUB ENCLOSURE
Top quality fibreglass panels set in beautiful Anodized Aluminum Frames. LUDMAN QUALITY CONTROLLED.



LUDMAN SINGLE SASH WOOD AWNING WINDOWS
A Single Sash Wood Unit with extraordinary design flexibility. Handled by wood jobbers everywhere.

LUDMAN CORPORATION • North Miami, Florida • Dept. PA-9

Please send me full information on the following Ludman Products:

Auto-Lok Aluminum Awning Windows ☐ Wood Auto-Lok Awning Windows ☐
Jalousies ☐ Jalousie Doors ☐ Aluminum Framed Sliding Glass Doors ☐
Shower Door Tub Enclosures ☐ Intermediate Aluminum Projected Windows ☐
Single Sash Wood Awning Windows ☐

Name.....Firm.....

Street.....City.....Zone.....State .....

the new smithcraft troffer is

RECESSED LIGHTING AT ITS BEST

in clean, trim appearance . . . and in mechanics, too!

Twelve important features of the new Smithcraft Troffer illustrate the completeness of design development that went into this new outstanding recessed lighting. Important among the twelve features for architects and engineers is the fact that they can now create absolutely clean, trim, architectural lighting effects without the disturbing blemishes caused by exposed hinges, locks, fasteners or screws. The ceiling is uncluttered . . . the final lighting effect is crisp, modern and efficient.

The new line of Smithcraft Troffers is truly complete, offering troffers with or without integral trim flange, with the widest choice of shielding media and adaptable to virtually any ceiling construction.

Specify Smithcraft for superior appearance, unsurpassed lighting performance together with ease and economy of installation.

Complete details are offered on the new Smithcraft 12" wide troffers. This new Smithcraft Troffer book also gives complete information on the new Smithcraft line of 2-foot wide troffers — available with many types of shielding media and for many different types of ceiling construction.

1. No visible catches, latches, hinges, bolts or screws.
2. Door frame containing glass, lens or plastic opens or closes by simple pressure upwards with the new exclusive Smithcraft Pressure-Catch. (Patents pending). To remove door-frame simply lift off without tools or loose parts.
3. In louvered units, louvers hinge from either side, close by simple pressure upwards, and are removed without tools or loose parts. (Patent #2,559,640)
4. Architecturally precise modules for exactly 12" openings — perfectly straight, trim, in-line rows, whether mounted individually or in continuous rows.
5. No light leaks.
6. Slimly-designed glass frame for better appearance and better efficiency.
7. Wide selection of shielding media, spot boxes, pattern lighting, etc., for flexibility of design.
8. Troffers are available with integral trim flange for finishing the ceiling opening, if required.
9. Adaptability to today's ceilings is virtually universal. Simple clips adapt troffer to all of today's most common ceilings; simple provision for adaptability to all others. The new Smithcraft Troffer-in-plaster frame method assures perfectly square openings.
10. From start to finish only tool required is a screwdriver.
11. No exact positioning required, maximum simple adjustability at every critical point, with the Smithcraft Yoke-Aligner Hanger (Patent #2,597,875, other patents pending)
12. Minimum number of parts and assembly on the job.

Smithcraft LIGHTING DIVISION, CHELSEA 50, MASS. *America's finest recessed lighting*

DISTINGUISHED SERVICE TO ARCHITECTURAL PROFESSION

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AMERICAN INSTITUTE OF ARCHITECTS

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Reinhold is proud to have been chosen as publisher of this momentous work . . . and PROGRESSIVE ARCHITECTURE is pleased by the honor bestowed on the Reinhold Book Division, a collaborator with P/A in the world-famous Progressive Architecture Library and other architectural and art books currently numbering 67 titles.

It is with a deep sense of gratitude and a renewed determination to advance the profession in every way within our means that we at Reinhold express our appreciation of this signal honor.

Philip H. Hubbard

Philip H. Hubbard, President

Reinhold Publishing Corporation

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THE AMERICAN INSTITUTE OF ARCHITECTS

CITES WITH HONOR

REINHOLD PUBLISHING CORPORATION

FOR ITS NOTABLE SERVICE TO THE INSTITUTE

AND THE

ARCHITECTURAL PROFESSION IN PUBLISHING

"THE ARCHITECT AT MID-CENTURY"

HOLDING TO THE WELL ESTABLISHED PRINCIPLE–
TOO OFTEN FORGOTTEN IN OUR DAY–
THAT THERE ARE PUBLISHING RESPONSIBILITIES
ABOVE THAT OF PROFIT MAKING. YOU HAVE DEMONSTRATED
THAT THE IMPOSSIBLE IN VOLUME OF WORK AND
RATE OF PROGRESS CAN, BY SKILL AND DEVOTION TO
A WORTHY CAUSE, BE TRANSFORMED
INTO THE POSSIBLE.

* * *

YOUR ACHIEVEMENT HAS ADVANCED
ARCHITECTURAL EDUCATION AND PRACTICE IN AMERICA,
AND HAS EARNED THE GRATITUDE OF STUDENT,
TEACHER AND PRACTITIONER.

George Bain Cummings
SECRETARY

PRESIDENT

Chicago apartment building installs

UNARCO dual-vectors to "beat the heat"

Easy to install . . . The UNARCO dual-vector is easily fitted between studding. The unit contains heating and cooling coil, blowers, motor and controls—and is available in Model DV-60 (shown) and Model DV-120 (of larger dimensions and capacities).

The people who live in this apartment will enjoy year around UNARCO weather conditioning. In winter, clean, even, hot water heating; and in summer, cool, filtered and dehumidified air—ALL FROM ONE SYSTEM.

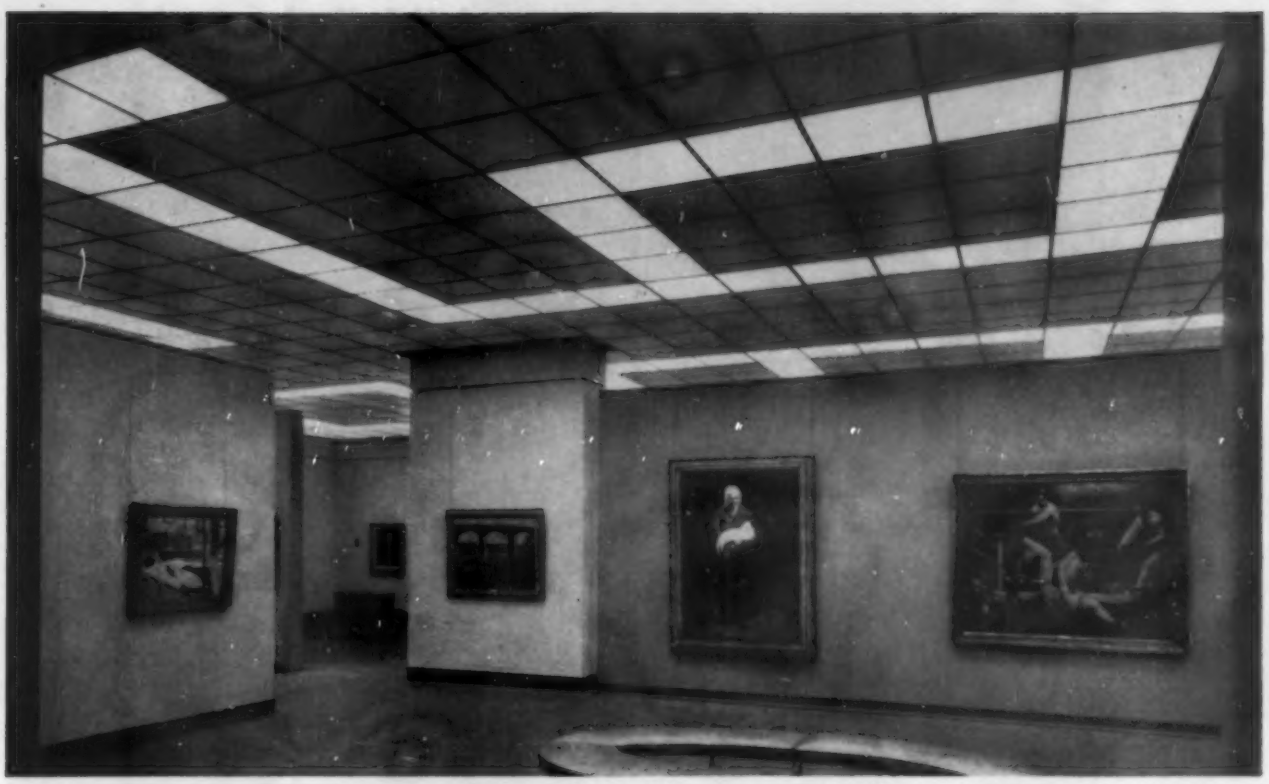
That's because new UNARCO dual-vectors, each with its own control knob, allow you to select the exact temperature desired for each individual room. The UNARCO "hydro-pac" water chiller supplies the cooled water and your boiler provides heated water for the system.

Truly revolutionary, this new development offers the luxury and comfort of weather tailored to the needs of each member of the family. Most surprising! This combination heating and cooling is available at little more than the cost of a hot water heating system alone.

Builders! Contractors! Architects! The UNARCO dual-vector offers you a fine opportunity to broaden your markets by offering the finest in heating and cooling facilities available today. Write NOW for detailed information regarding cost, design and operational data! Address: Dept. 101-D, HEATING & COOLING DIVISION;

UNION ASBESTOS & RUBBER COMPANY
332 S. Michigan Avenue Chicago 4, Illinois

UNARCO dual-vectors
provide year 'round weather conditioning



In this painting gallery at the Whitney Museum, the panels of Alba-Lite are dimmed to show the location of the Fota-Lite panels. Louvers are photographically produced in Fota-Lite to transmit light at a 30° angle in this installation. Direct illumination on vertical surfaces at eye level totals 65 foot-candles. Fota-Lite also comes with louvers designed for 45° cutoff.

Whitney Museum of American Art, New York
Architect: Auguste Noel, A.I.A.
Lighting Consultant: Thomas Smith Kelly
Fixtures: Century Lighting and Rem-lite, Inc.

How the new Whitney Museum lights its galleries

Luminous ceilings in the new Whitney Museum of American Art in New York create an environment of beauty for the appreciation of beauty.

And they provide almost natural light illumination. *In the painting galleries,* two systems of lighting are combined in one luminous ceiling. The entire ceiling is made up of 24″ x 24″ panels of Corning Lighting Glassware, framed in metal muntins and suspended from the structural ceiling.

Panels of Corning Alba-Lite provide low brightness illumination for the central areas. Panels of Corning Fota-Lite direct lighting to vertical surfaces where paintings are hung.

In the sculptural gallery a luminous ceiling of Alba-Lite transmits soft, glare-free lighting. At certain points, ceiling panels can be removed so that bullet spotlights or other special lighting can be used to emphasize some special piece of sculpture.

These functional, flexible lighting installations are outstanding examples of the almost limitless range of application possible with Corning Engineered Lighting Glassware. From large 36″ x 100″ panels of Alba-Lite to small 6⅜″ Lenslites, you may choose lighting glassware designed specifically to meet your need.

You will find Corning Engineered Lightingware in your Sweet's Catalog, or for complete specification plus technical data, write for your free copy of the "Architects and Engineers Handbook of Lighting Glassware."

The luminous ceiling in this sculpture gallery is of Corning Alba-Lite—a light opal glass designed especially for smooth diffusion and excellent brightness control. Alba-Lite is not color selective.

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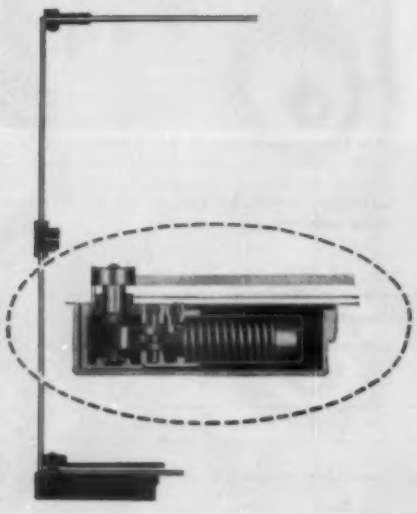
HARLEY, ELLINGTON AND DAY, INC., Architects



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W. G. Knoebel, Architect
Slack W. Winburn, Associate Architect

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For example, in this multi-story building, horizontal and vertical mullions and double weather-stripped tubular sash are aluminum. The structural grid system on stairwells, in penthouse and in other areas, also is aluminum by Cupples. All aluminum is in alumilite finish. Spandrels are fluted porcelain in off-white or rust.

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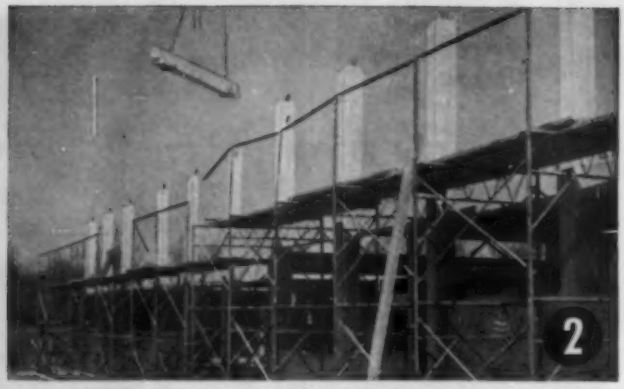

Next, the second floor spandrel beams were lowered into position.

Precast Concrete Units Cut Erection Time and Cost in Philadelphia Housing Project

Use of precast concrete columns, floors and roof decks for the 52 two-story buildings of the Liddonfield Housing Project in Philadelphia made possible fast construction at low cost per sq. ft. The 20 ft. wide buildings, ranging in length from 150 to nearly 200 ft., went up at a rate of two a week. Photos show the construction sequence employed.

Built for the Philadelphia Housing Authority, the 500,000 sq. ft. low-rent housing project consists of 412 firesafe dwelling units plus central-heating, community and management buildings. Liddonfield Architects of Philadelphia designed the project. Stofflet & Tillotson was the general contractor.

Fast, economical construction is possible in any structure designed to utilize precast concrete units. It can be built to conform with applicable building codes and will offer all the advantages of conventional concrete construction for frames, floors and walls.

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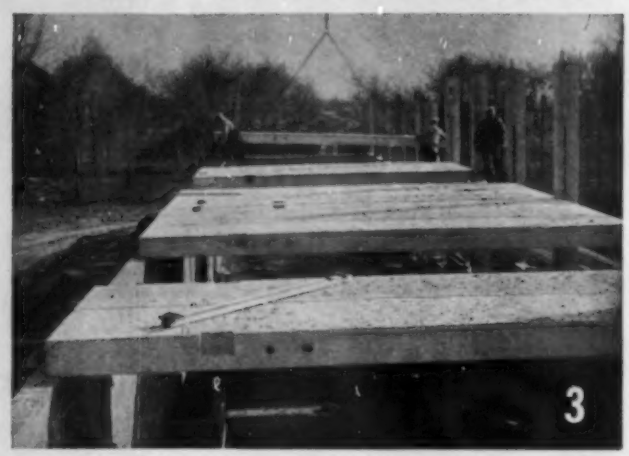
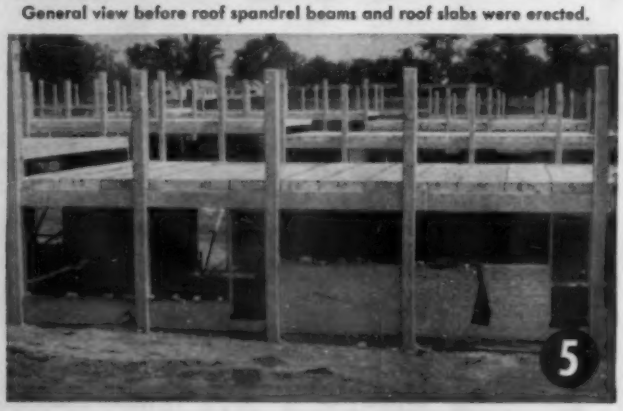


After rear walls were brought to second floor elevation, 3-ft. wide precast concrete floor channels with 10-in. legs were placed across the entire width of the buildings. Below is a view of the underside of the floor showing how conduits pass through sleeves in the legs.

General view before roof spandrel beams and roof slabs were erected.

Finished building. Precast roof slabs project 2 ft. to form sunshade.



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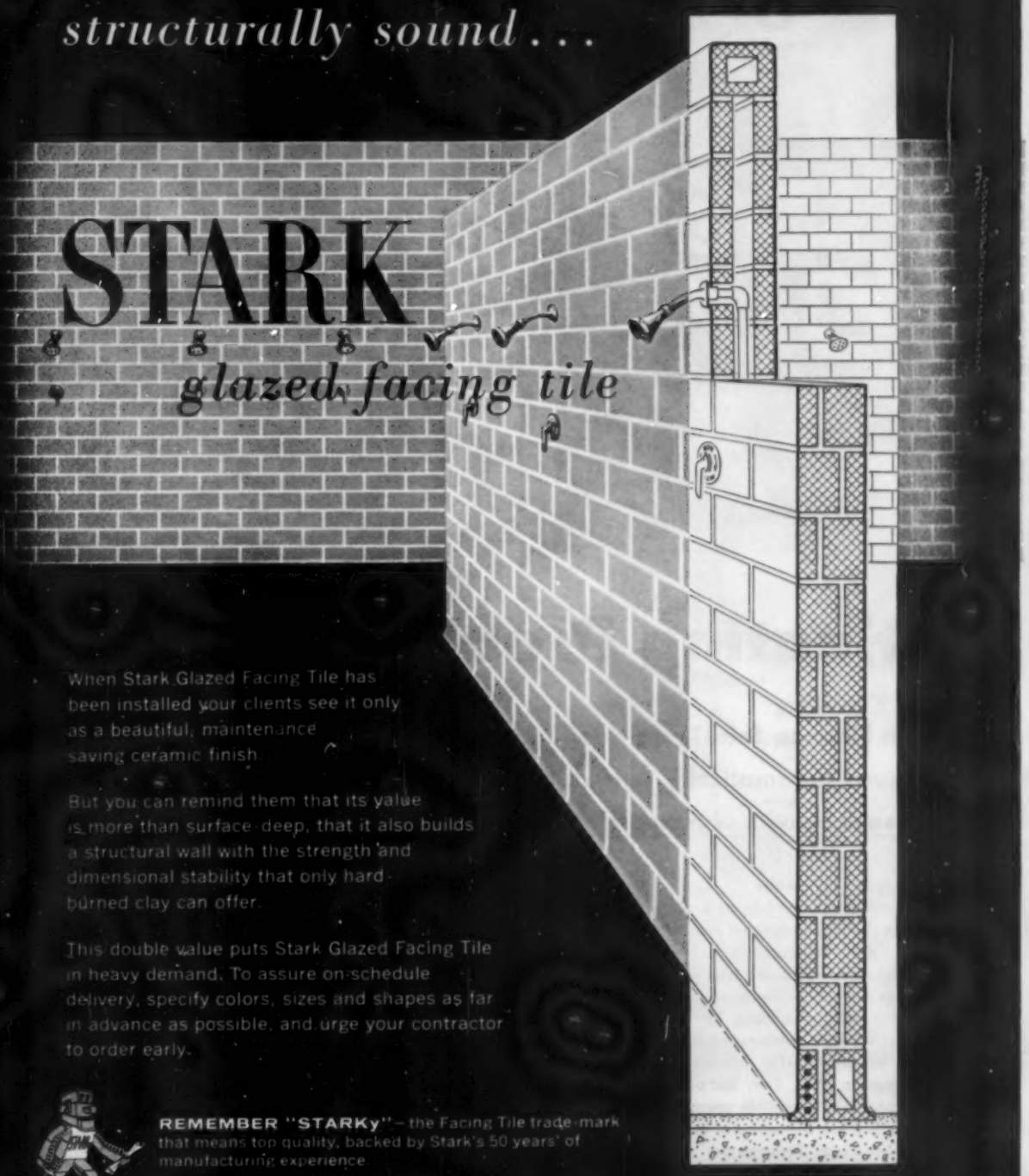

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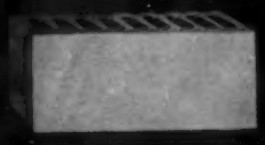

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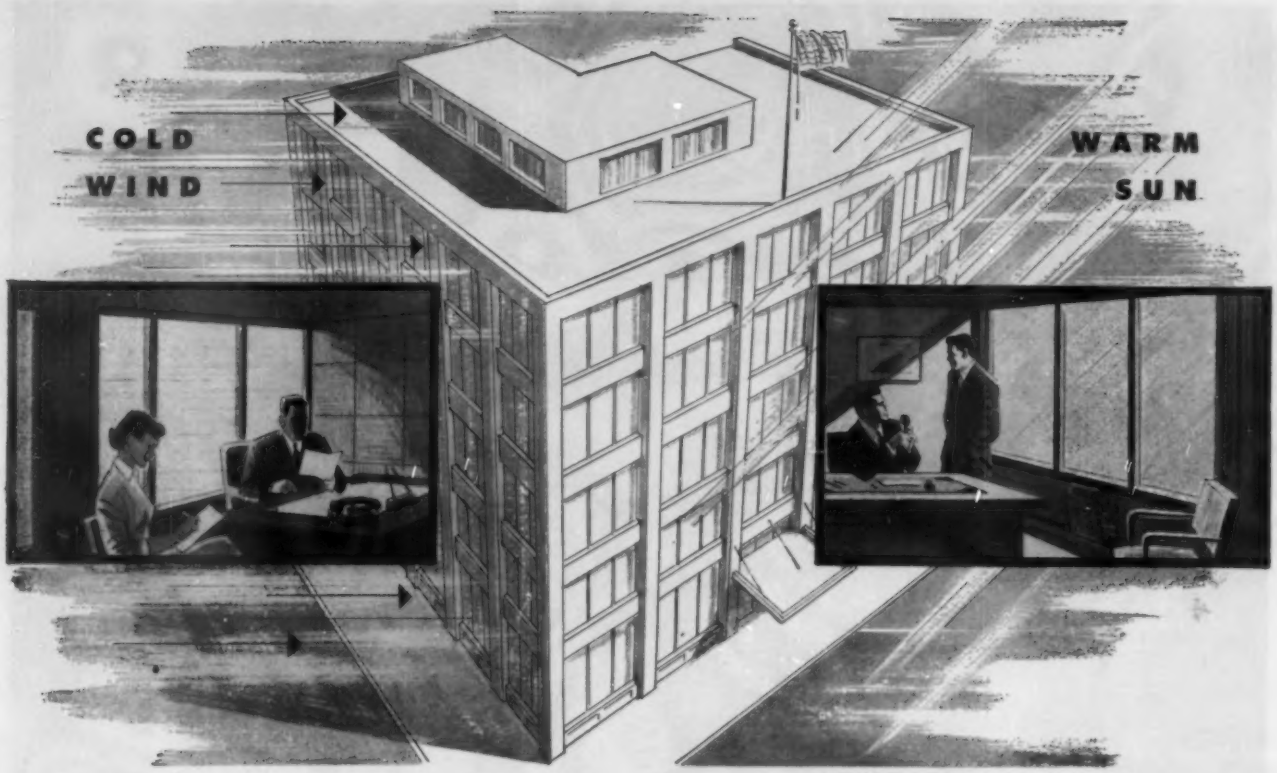

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- professional adviser: Harold R. Sleeper, F.A.I.A.

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Porcelain enamel steel and aluminum are being adapted daily to new uses such as classroom chalk boards, exterior and interior murals, acoustical panels, interior finishes and decorative features. However, despite the rapid development of this building material, only a limited number of designers have gained a knowledge of its advantages and only a few of the material's limitless possibilities have been investigated.

purpose:

The primary purpose of this competition is to stimulate design interest and widen experience in the use of porcelain enamel steel and aluminum, to improve present methods of application and to encourage the exploration for new uses. It is also hoped that the designs submitted in this competition will encourage communities across the nation to build better schools and community youth centers.

the problem:

The competition problem consists of two divisions:

1. The design of an elementary school to consist of a kindergarten, six classrooms, a multi-purpose room and certain attendant facilities.

2. The design of a community youth center to consist of a lounge, a multi-purpose recreation room, a small theatre, a music library and certain other accessory rooms.

A contestant may enter any number of submissions in either or both divisions of the competition. However, no contestant, including the Grand Prize winner, is eligible to receive more than one prize in each division.

porcelain enamel design competition

$25,000 IN 25 AWARDS

GRAND PRIZE - $5,000

Elementary School

1st Prize	$ 3,000
2nd Prize	1,500
3rd Prize	1,000
Honorable Mentions: 9 at $500 each	4,500
TOTAL	$10,000

Community Youth Center

1st Prize	$ 3,000
2nd Prize	1,500
3rd Prize	1,000
Honorable Mentions: 9 at $500 each	4,500
TOTAL	$10,000

The Grand Prize will be awarded to the submission in either division which, in the opinion of the jury, goes furthest toward accomplishing the purposes of the competition.

Basis of Awards:

Awards will be made on the basis of:

1. Skill in planning and excellence of design.
2. Use of porcelain enamel steel and aluminum, including practical new uses of these materials and improved methods of detailing.
3. Clarity of presentation.

Eligibility: This competition is open to architects, designers, draftsmen and students of architecture who are residents of the continental United States and Canada, except the following, their employees, office associates, and families: members of the Jury, Ferro Corporation, its advertising agency, Architectural FORUM and the Professional Adviser.

This competition has been approved by The American Institute of Architects.

The competition closes December 12, 1955.

Announcements of Awards: On or about January 16, 1956.

Contestants must register (coupon right) to receive the program, which will include further details of the competition. This is an announcement only; conditions governing the competition and the awards are set forth in the program.

Harold R. Sleeper, F.A.I.A., Professional Adviser
c/o Architectural FORUM
9 Rockefeller Plaza, New York 20, N. Y.

I intend to enter the Porcelain Enamel Design Competition. Please send me the program, including the conditions governing the competition and the awards.

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Check one: Architect ☐ Designer ☐ Draftsman ☐ Student ☐

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Architect,
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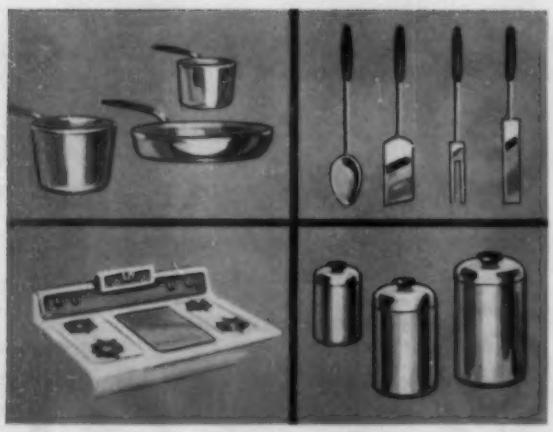

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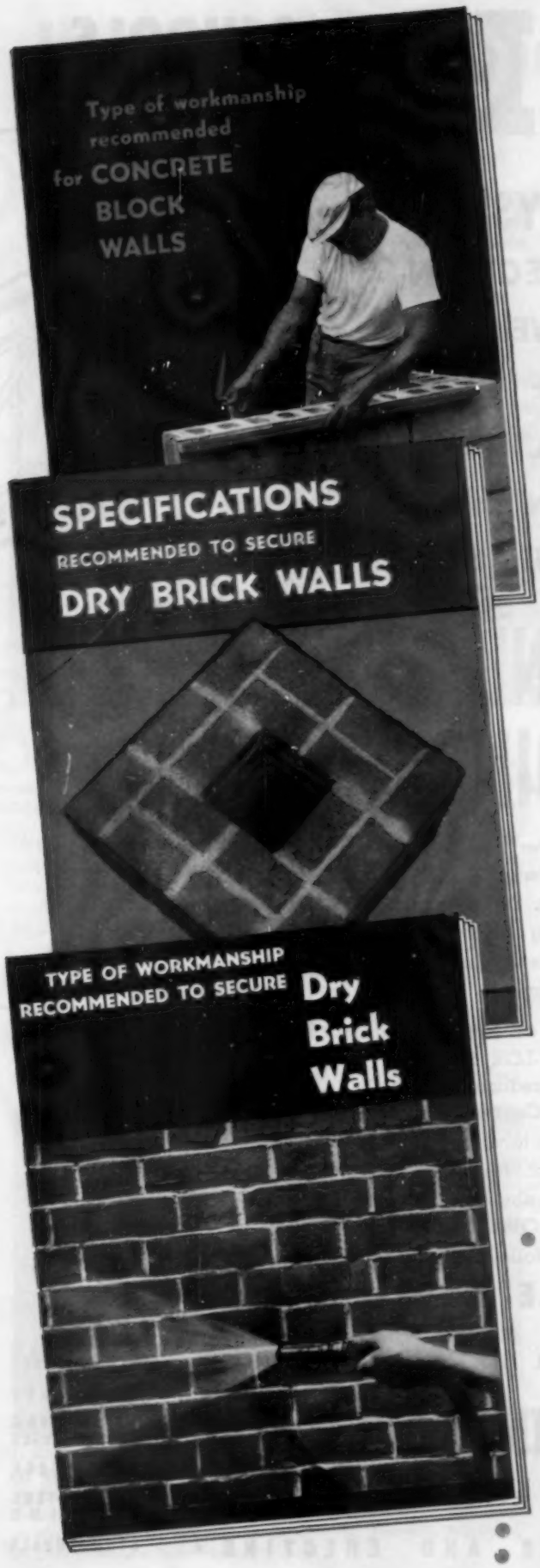
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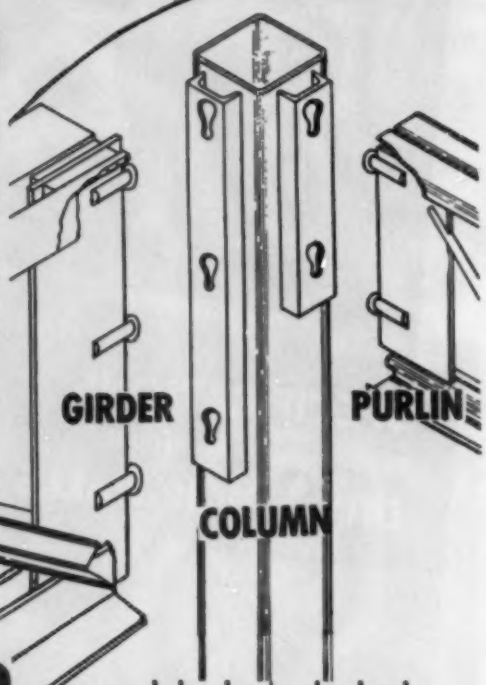
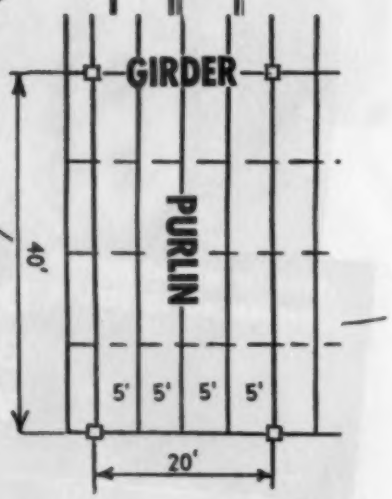
EMPLOYING A RIGID CONNECTION WITHOUT BOLTS, RIVETS OR WELDING — REDUCING ERECTION TIME FROM WEEKS TO DAYS—GETTING A BUILDING UNDER ROOF TO SPEED UP FINISHING WORK AND ADVANCE OCCUPANCY.

SCHOOLS HOSPITALS



COMMERCIAL AND INDUSTRIAL BUILDINGS



Think back—think of all the products or systems ever designed to reduce construction costs. Then for factual proof of what V-LOK is doing in school work, for example, watch a big rambling high school frame erected complete, including steel deck, in a few days.

You're a tax payer. You can see in parents' faces what V-LOK is doing across the country to reduce the tax burden. Architects and Contractors are actually inviting parents to witness this construction achievement. It is obvious that a medical center, suburban insurance office, factory or warehouse will give YOU and the OWNERS the same advantage. One V-LOK job is so satisfying, others follow **Write for Design Manual**

A RIGID EXPANDABLE STEEL STRUCTURE

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V-LOK STEEL FRAMING
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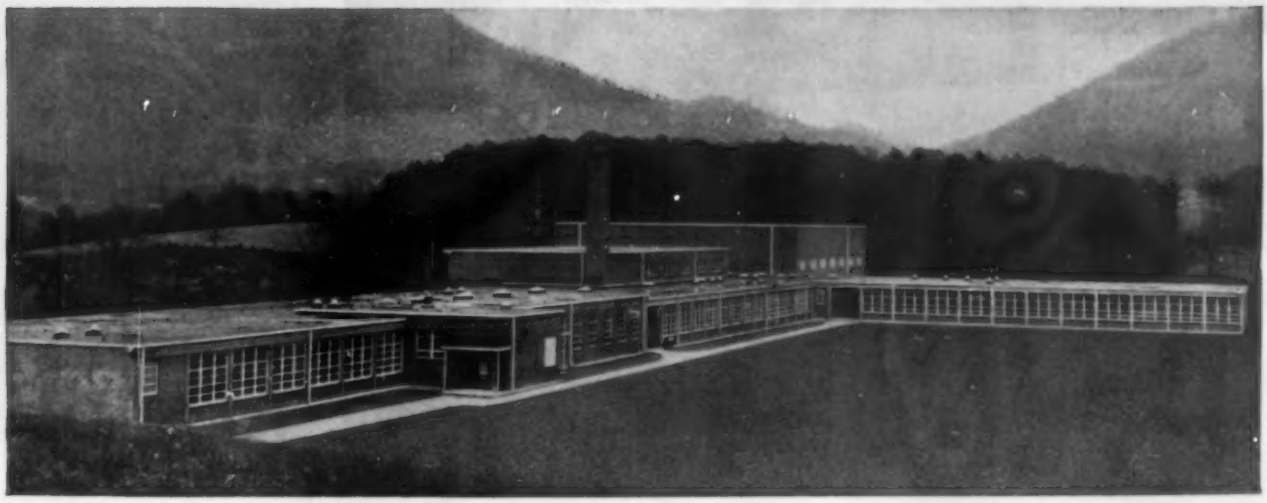
STRUCTURALS

N. Carolina School Board Specifies Combustioneer Stokers In New 5-Building, $3,235,000 Program!



Buncombe County School Board bases choice on Combustioneer's patented respirator, extended worm gear features, low initial cost.

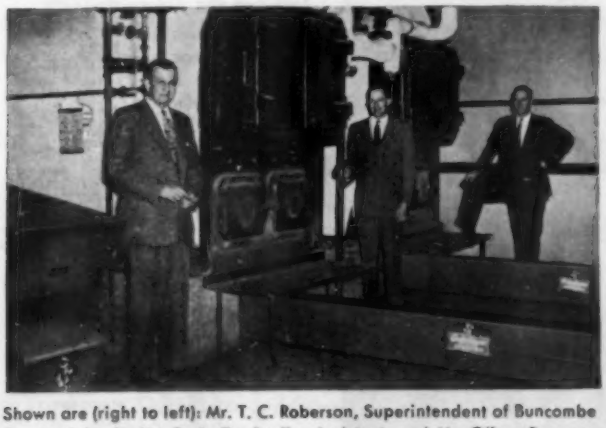
In the past 25 weeks, five of the most modern, up-to-date school buildings to be found anywhere in the nation have opened their gleaming doors to more than 3,000 students in Buncombe County, North Carolina. Over $3,235,000 have gone into this new building program . . . with the school board, the architects and the builders working hand in hand . . . assuring each voter that every tax dollar is getting a full 100c worth of school.

A. C. Reynolds High School *(above)*, located in Biltmore, is certainly one of the most beautiful of all. Designed by the firm of Lindsey Madison Gudger, Asheville architects, the building boasts of 72,000 square feet of functional floor area—and was "delivered" to the school board early in 1955.

All five of these new Buncombe County school buildings are heated with the latest model Combustioneer Bin-Feed Stokers!

Combustioneer Stokers were the natural selection. Exclusive, patented features contained only in Combustioneer Stokers provide the most even, constant, superbly economical heating systems available. The *Agitating Transmission*, for instance, keeps the fire-bed open and free-burning. The famous Combustioneer *Automatic Respirator* controls the air delivery for maximum combustion and smoke-free stacks. (Heating engineers are overwhelmingly enthusiastic about these two exclusive Combustioneer features!)

There's a Combustioneer Hopper or Bin-Feed Stoker just right for any application—and they range in size from 9 to 1,000 lbs. per hour. So, for the very latest in economical heating, with savings up to 25% and more, write today for Combustioneer's new folder "The Buncombe County Story"—which gives factual data on these five new school buildings.



Shown are (right to left): Mr. T. C. Roberson, Superintendent of Buncombe County Schools; Mr. R. A. Tomberlin, Assistant, and Mr. Oliver Spencer, Jr., Combustioneer District Manager for North and South Carolina. Mr. Roberson gave four reasons for the board's selection of Combustioneer Stokers: (1) Price, (2) Extended Worm Gear, (3) Automatic Respirator, (4) Combustioneer's Performance.

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THE STEEL PRODUCTS ENGINEERING COMPANY
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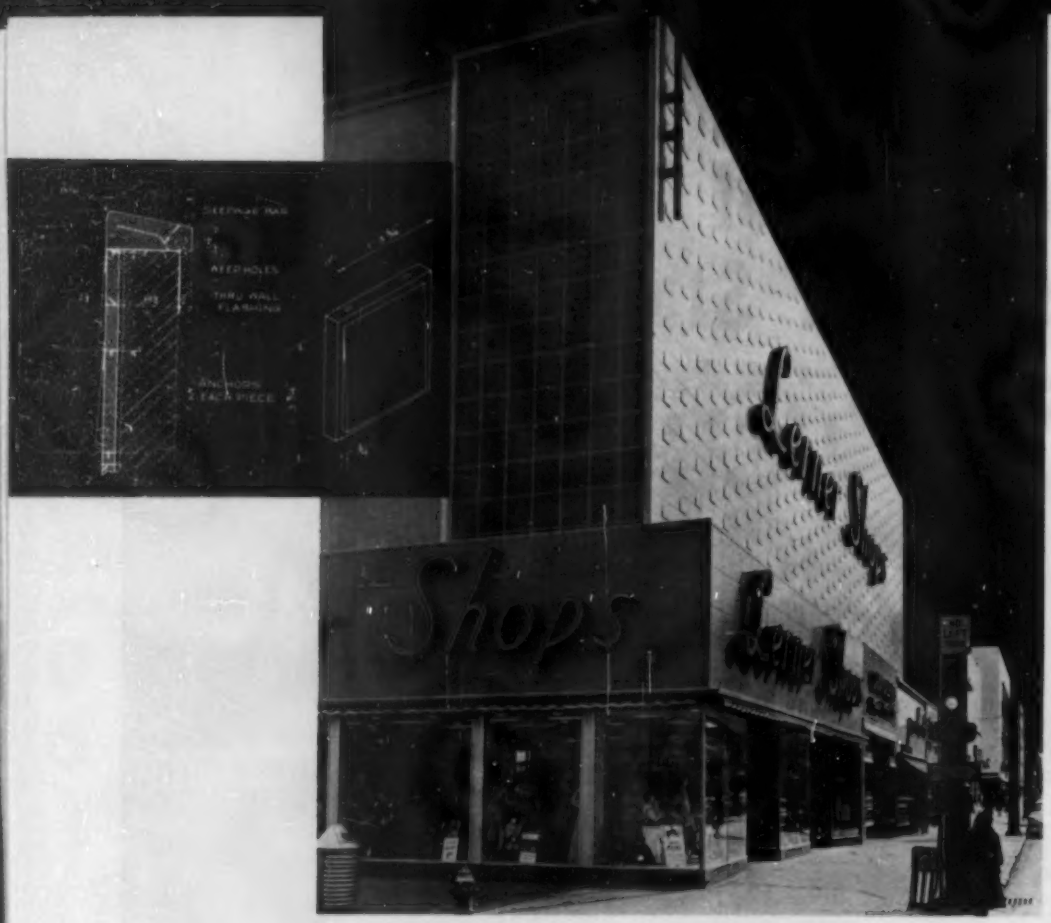
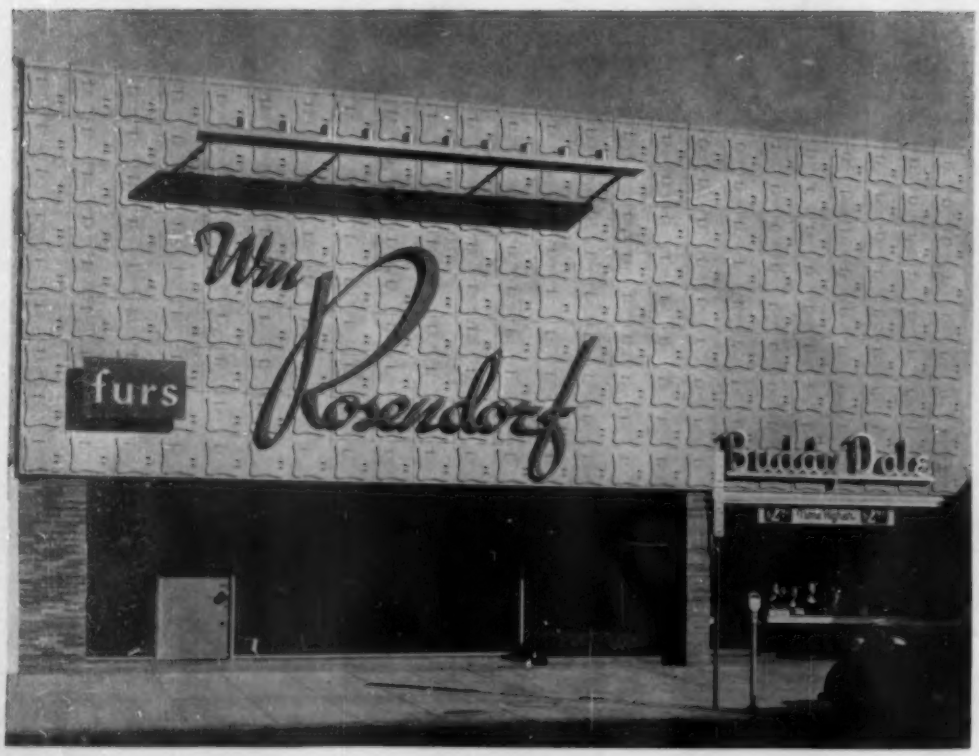


LERNER SHOP
Denver, Colorado

Edwin H. Cordes—*Architect*
Associated Lerner Shops, Inc. of Colorado—*Builders*

Two-inch thick Architectural Terra Cotta units 16" x 32", accented with 16" square shingles, make an imposing facade in light mottled gray. Sign space over the show windows is a contrasting green; corner vertical panel a rich harvest brown.

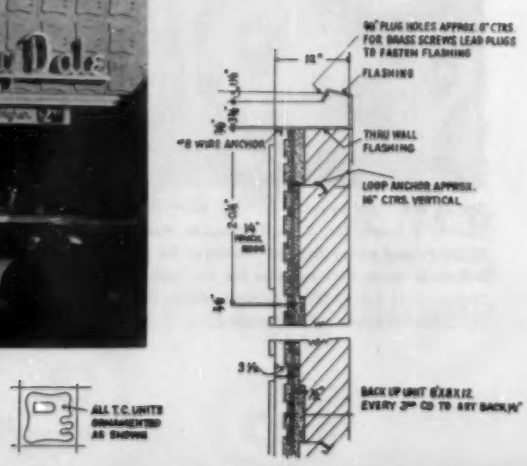
Design possibilities unlimited . . .



WM. ROSENDORF STORE
Washington, D. C.

Berla and Abel—*Architects*
Tuckman and Rinis—*Builders*

A striking example of today's creative use of Architectural Terra Cotta. Decorative facade is sculptured terra cotta in an attractive light gray.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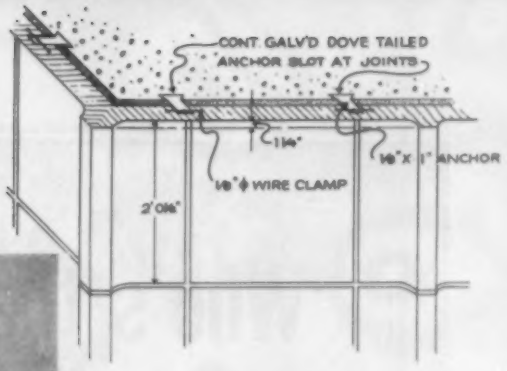
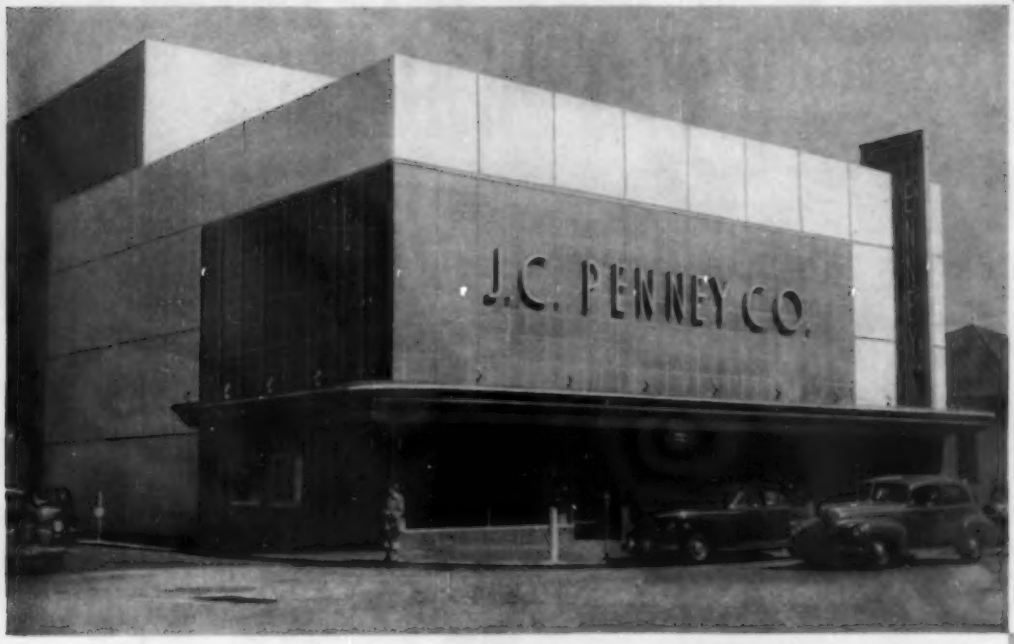
THRU WALL FLASHING
#8 WIRE ANCHOR
LOOP ANCHOR APPROX. 16" CTRS. VERTICAL
BACK UP UNIT 6"x8"x12" EVERY 2nd CO TO ANY BACK-UP





J. C. PENNEY CO. STORE
Clearwater, Florida
Roy W. Wakeling—*Architect*
R. M. Thompson Co.—*Builders*
This modern store's facade is made distinctive by the sea green Architectural Terra Cotta, in units 24" x 24".

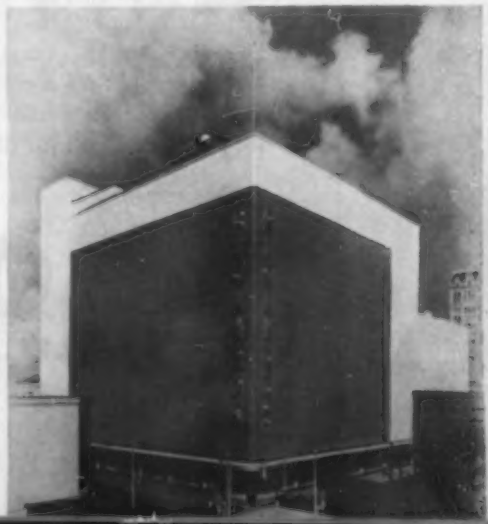
RICHARDS STORE, Miami, Florida
Steward and Skinner—*Architects*
Interstate Marble & Tile Co.—*Contractors*
Old building is given a colorful, up-to-date appearance with aquamarine Architectural Terra Cotta. Units 24" x 24" are grouped in sections of eight by wide mortar joint which gives effect of panels 8' wide by 4' high.

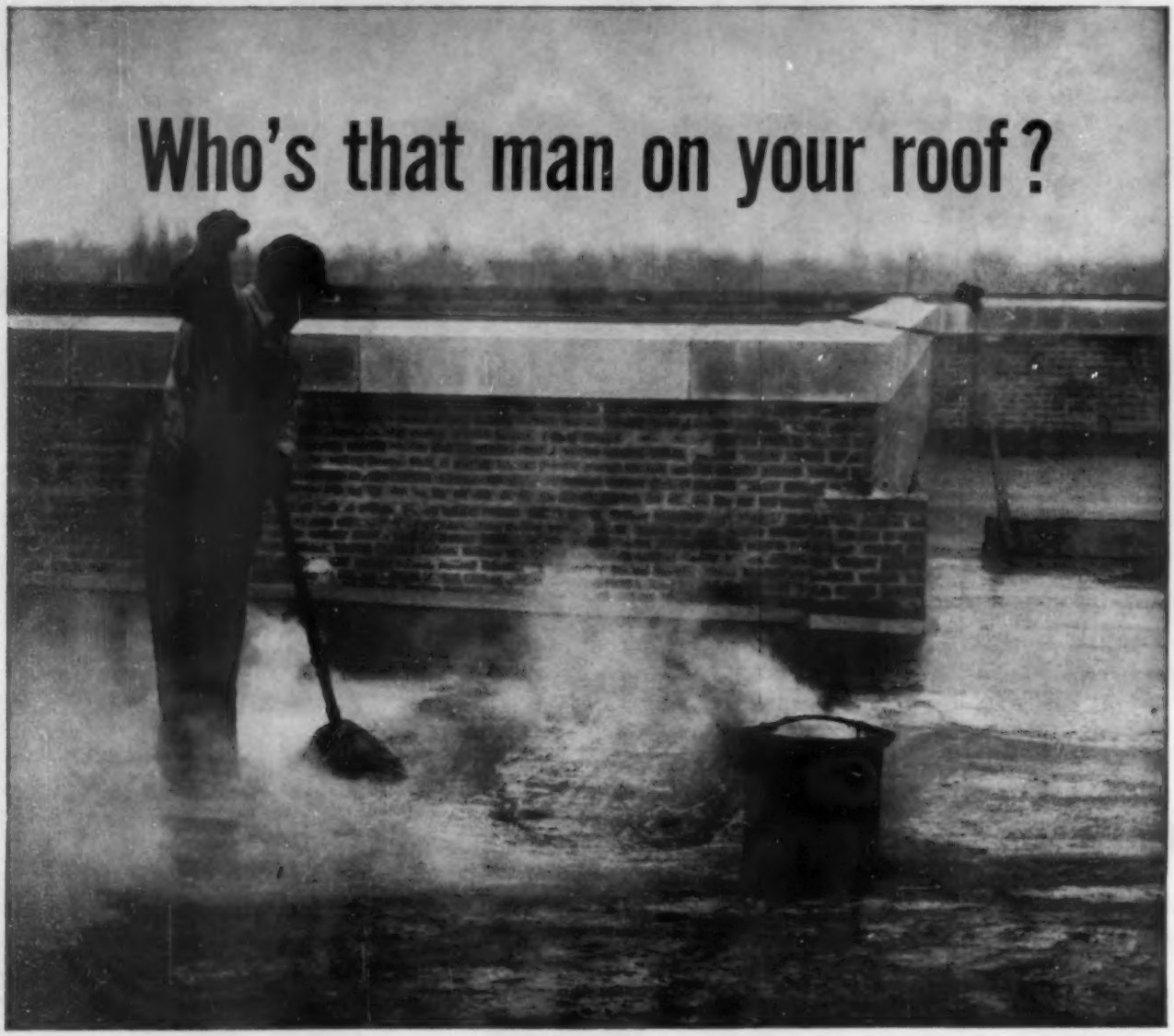
when you specify Architectural Terra Cotta

Store fronts can be modern, colorful, interesting. The versatility of Architectural Terra Cotta assures complete creative freedom. This enables you to design facades that clearly define the character of a business. For decorative panels, sculpture or plain surfaces, you have a vast selection of colors and textures. Whatever the unit size, large or small, Federal Seaboard custom-makes Architectural Terra Cotta to your requirements. Though design possibilities are unlimited, you can still keep initial costs in line, maintenance at a minimum. Only soap-and-water washings are required to retain its original richness and ceramic beauty indefinitely. The advantages of appearance, permanence and price explain why so many other leading architects are specifying Architectural Terra Cotta so often, so effectively.

Construction detail, data, color samples, advice on preliminary sketches, will be furnished promptly without charge on Architectural Terra Cotta and Ceramic Veneer. **FEDERAL SEABOARD TERRA COTTA CORPORATION,** 10 East 40th Street, New York 16, N. Y. PLANT AT PERTH AMBOY, NEW JERSEY

F S T C





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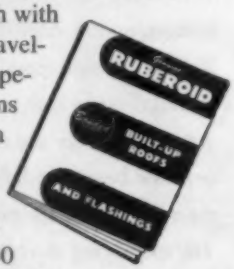

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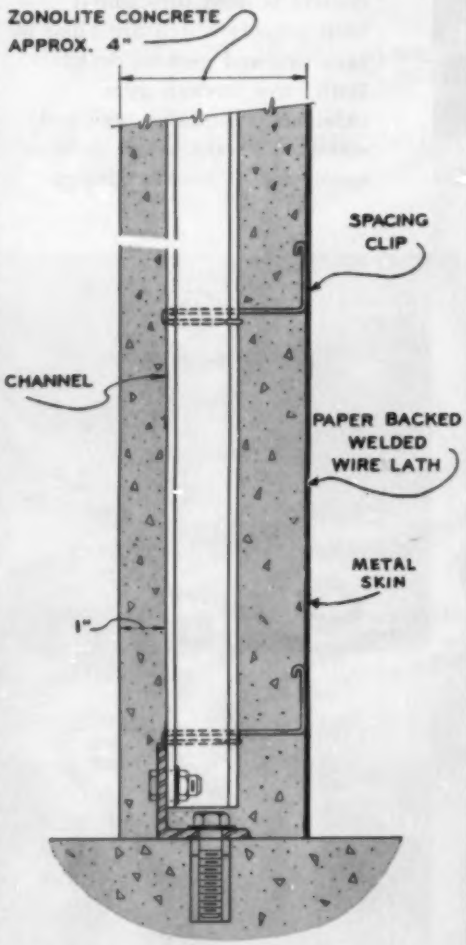
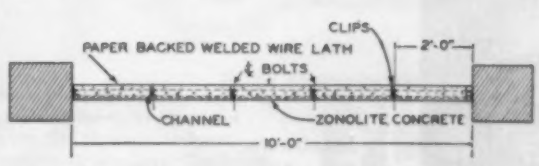


SPANDREL BACK-UP



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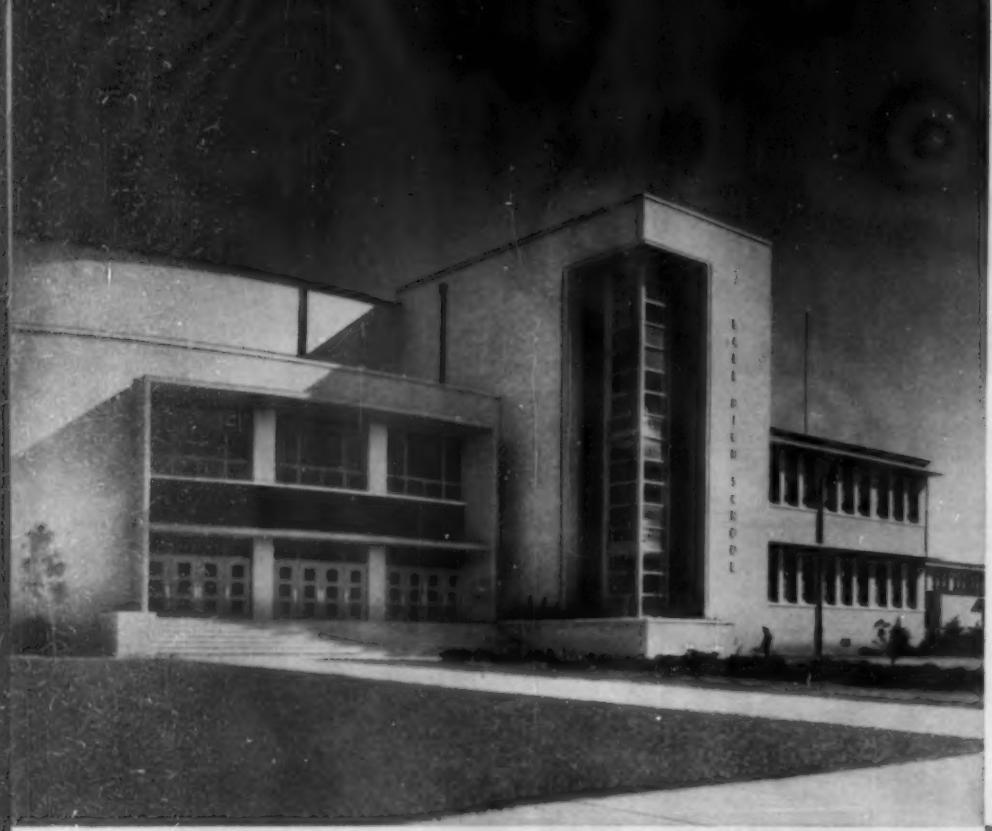


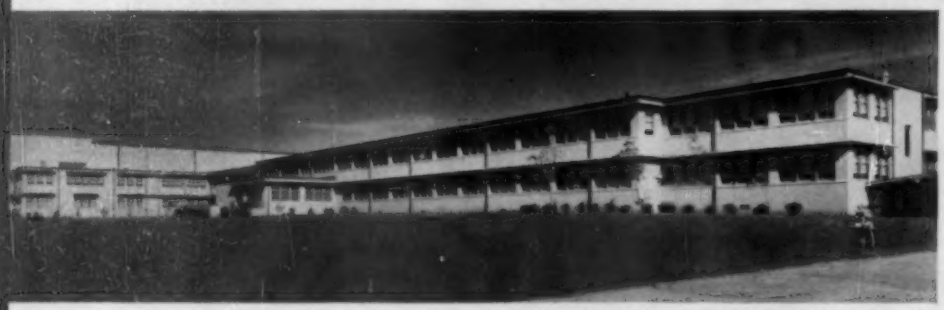
BALL HIGH SCHOOL, GALVESTON, TEXAS • See Rear View Below

Architects for both buildings
PRESTON M. GEREN,
Fort Worth, Texas
R. R. RAPP,
Galveston, Texas

Mechanical Engineers
YANDELL, COWAN & LOVE
Fort Worth, Texas

Plumbing and Heating Contractor
A. J. WARREN
Galveston, Texas

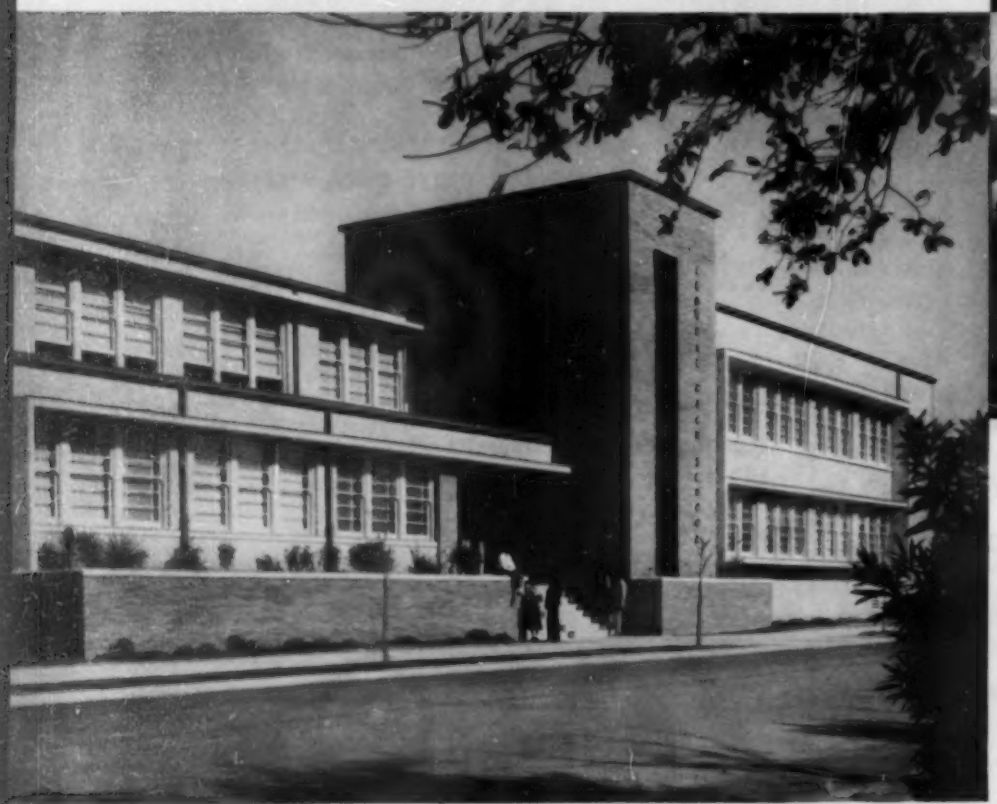
Powers automatic temperature control is used throughout both schools which are alike in facilities and general design. Both have modern gym, cafeteria, swimming pool and showers. Photos below indicate excellence of interior design.



Below: CENTRAL HIGH SCHOOL, GALVESTON, TEXAS

Drama and Public Speaking Classroom

Relaxation Area near Cafeteria Entrance



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Schoolroom Comfort and
Fuel Economy is
Assured by Powers Control

(c-16)

They kept it simple... in these modern Galveston schools

Heating . . . Ventilating . . . Showers . . . Water heaters are all regulated by

POWERS *Temperature Control*

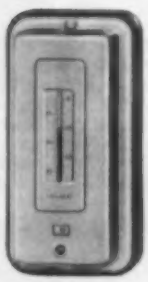
One dependable Source, one responsibility, for satisfactory performance and service if required, is one of the many reasons why so many buildings are equipped throughout with Powers temperature control.

Chemistry Lab

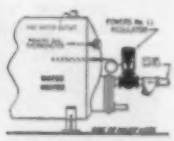
Auditorium

Civics and History Classroom

Home Economics Classroom



Each School has Individual Room Control of heating and ventilating.



Powers No. 11 Regulators Control Domestic Water Heaters also Swimming Pool Heaters.

Boys and Girls Showers also are Thermostatically controlled by Powers

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The Invisible Enemy No.2

moves with incredible speed

In time of war it instantaneously devastates and obliterates with its searing heat, every human being within a tremendous radius, when released by a nuclear bomb. Though it has no temperature, its enormous energy changes into heat when it strikes and is absorbed by a surface.

Upon escaping from a building in winter, it leaves a chill behind. When it invades in summer, it takes its toll in excessive heat and human distress.

Its aliases are many—Infra-Red Rays, Heat Rays, Radiant Energy, Radiation.

It is responsible for 93% of the heat flow downward in summer through roof spaces; in wall spaces, for 65% to 80% of heat losses in winter, and heat flow inward in summer; for about 55% to 75% of heat loss upward in winter through ceiling and roof spaces.

Buildings are generally constructed with wall and ceiling air *spaces*, because the greatest flow of heat possible between two solids is by direct conduction—actual physical contact; and since air has low density, it allows little heat flow through it by conduction.

The enemy then becomes radiation in downward heat flow; and radiation and convection in upward and side heat flow.

A STALWART SHIELD

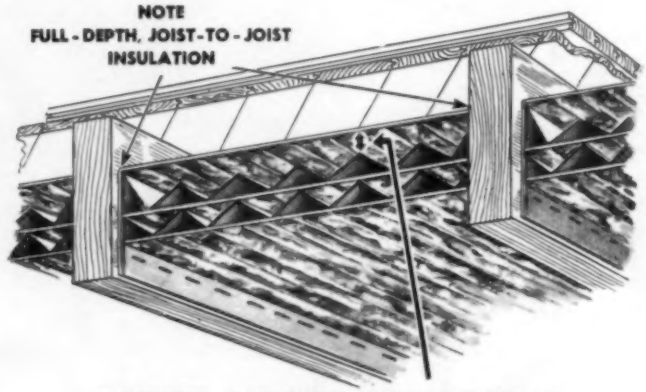
A shield against these enemies is multiple accordion aluminum. Its surfaces have an absorptivity to heat rays of a mere 3%; reflect them at the rate of 97%, and emit them at a rate of only 3%. Thus they retard the flow of heat rays outward or inward. Accordion aluminum is likewise a stalwart shield against the flow of heat by convection, its multiple layers of metal and fiber offering extremely effective resistance. Heat flow by conduction is minimized by its multiple layers of large air spaces, because they have slight density.

Scientifically separated sheets of aluminum, giving UNIFORM, full-depth protection to every inch of space between joists, will imprison the invisible enemy indoors in winter, prevent its invasion in summer, and transform it into a friendly and useful servant.

Its continuous metal sheets, up to 750 feet long, have almost zero permeability to water vapor. Infiltration under its flat, stapled flanges is slight. Its scientific construction minimizes condensation on or within this type of insulation.

More than 250 million square feet are in use today. For 10 years it has been repeatedly specified and used by many of the leading architects, engineers and builders of America.

Yours for the asking is a discussion of how and why aluminum insulates even under extreme conditions. It will be found in the booklet, "Thermal Test Coefficients of Aluminum Insulation for Buildings," published by the AMERICAN SOCIETY OF HEATING & AIR CONDITIONING ENGINEERS. Use the coupon for the literature and free samples of this scientific insulation.



NOTE FULL ONE-INCH EXTRA AIR SPACE above accordion pleats for even more resistance to heat flow. Each sheet extends from joist-to-joist.

COST OF EDGE-TO-EDGE INFRA Multiple Aluminum Insulation installed in new construction between wood joists, material and labor

Type 6-PS about 10¢ sq. ft.
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Please send ASHAE Booklet: "Thermal Test, etc."

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Number 1

P/A NEWS SURVEY

September 1955

Photos: Gene Hell

2¼" SHELL SOARS 87' 6"

RALEIGH, N. C. Aug. 14—First major use in this country of the hyperbolic paraboloid for residential construction is this dramatic, doubly-curved shell, made up of three layers of nail-laminated, ¾-in. fir boarding. Supported at its two low points on concrete buttresses, it was designed by Eduardo F. Catalano, Argentine architect-owner. Atilio Gallo was Structural Engineer; Frank Walser, General Contractor; and Frank Caldwell, Associate.

Spaces within range from tall, glazed areas that take in all outdoors, to almost wholly enclosed spaces bordering the shell's lower points; interior partitioning is independent of the structural cover.

U.S. CENTER SLATED FOR BERLIN

by Thomas H. Creighton

WASHINGTON, D.C., August 3—At a meeting today in AIA headquarters, the Department of State today disclosed plans for an International Conference Hall in Berlin, designed by Architect Hugh Stubbins, Cambridge, Massachusetts. The building, part of the United States program for the support of free Berlin, will be on an 11-acre site bounded by the River Spree and the Tiergarten, near the central part of the city, visible and easily accessible from the Soviet sector of the city.

In March of this year, the State Department had asked the help of AIA in the design of this strategically important building. The special committee which was set up—Ralph Walker, Howard Eichenbaum, Moreland G. Smith, Nathaniel Owings, and John F. Harbeson—selected Stubbins as architect, visited the site with him, and now has heartily endorsed the preliminary design shown in drawings and model.

The "theme" of the building is America's faith in freedom of speech. As Stubbins described his concept of a light, hung roof sweeping across a raised platform: "there is nothing closed, forbidding, or secretive about it. On all sides it opens to continual communication with the world . . . accessible to every new thought or experience." Several speakers at the meeting made the point that this open translation of ideals of free speech would be in marked contrast to the familiar, pompous, middle-European bureaucratic building. (An interesting contrast is offered by photographs which have just arrived in this country of the vast building given to Warsaw by the Soviet government, the beginnings of which this writer saw and reported in P/A in 1952.)

At the Washington Conference, Mrs. Eleanor Dulles, Special Assistant to the Director of German Affairs of the Department of State, discussing the background of the support program, emphasized the symbolic part this building will play in the program. It was stated that the Mayor and other Berlin officials are enthusiastic about the preliminary design.

Palace of Culture and Science, Warsaw, Poland, officially opened on July 22. Gift of the Soviet Union, the 760-foot high building contains an auditorium, theaters, broadcasting studios, libraries, and art museum.

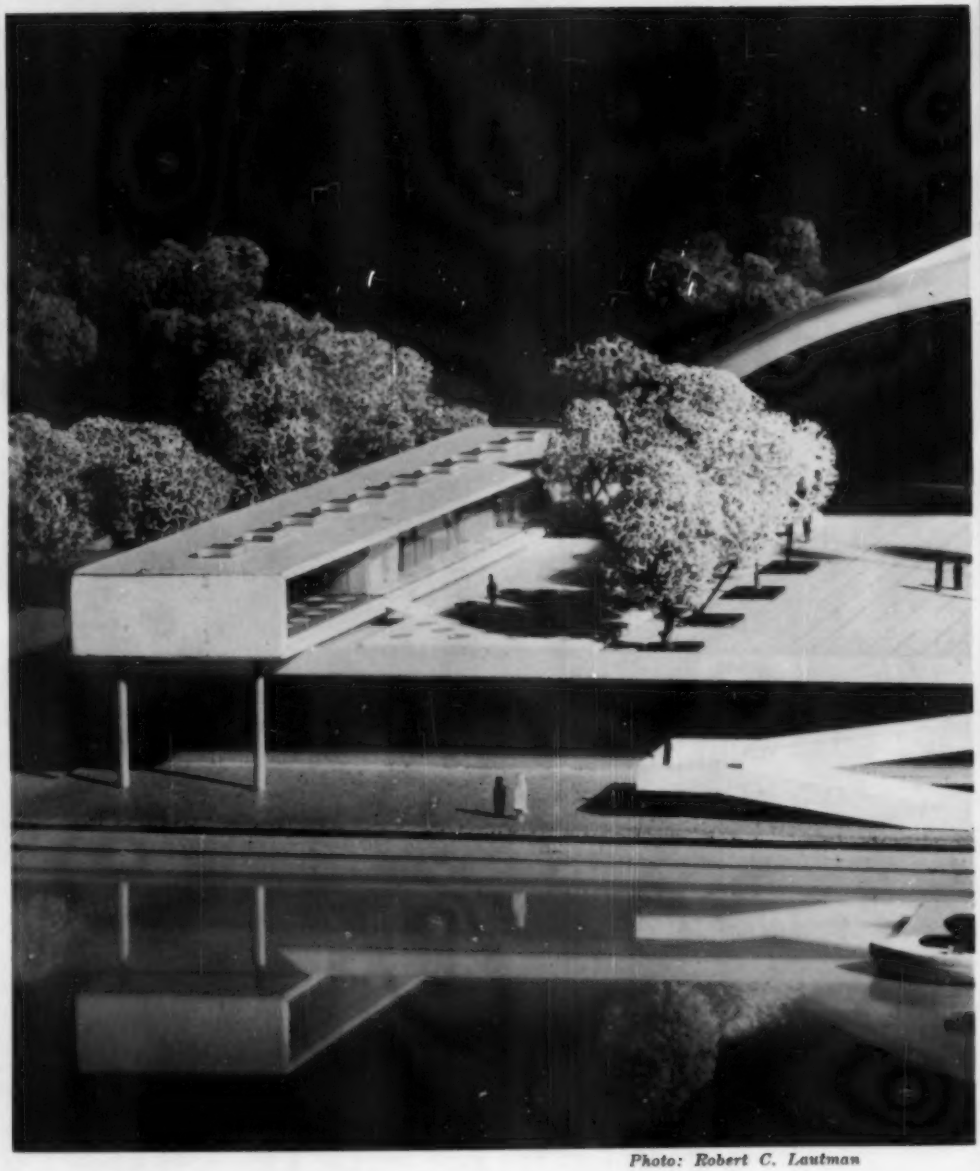


Photo: Robert C. Lautman

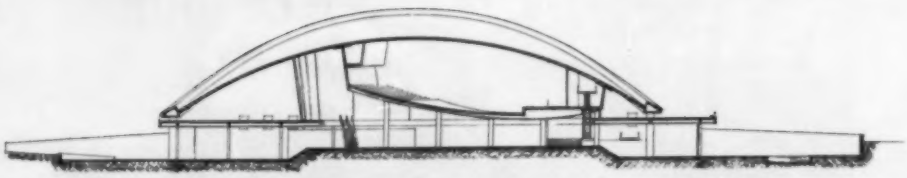
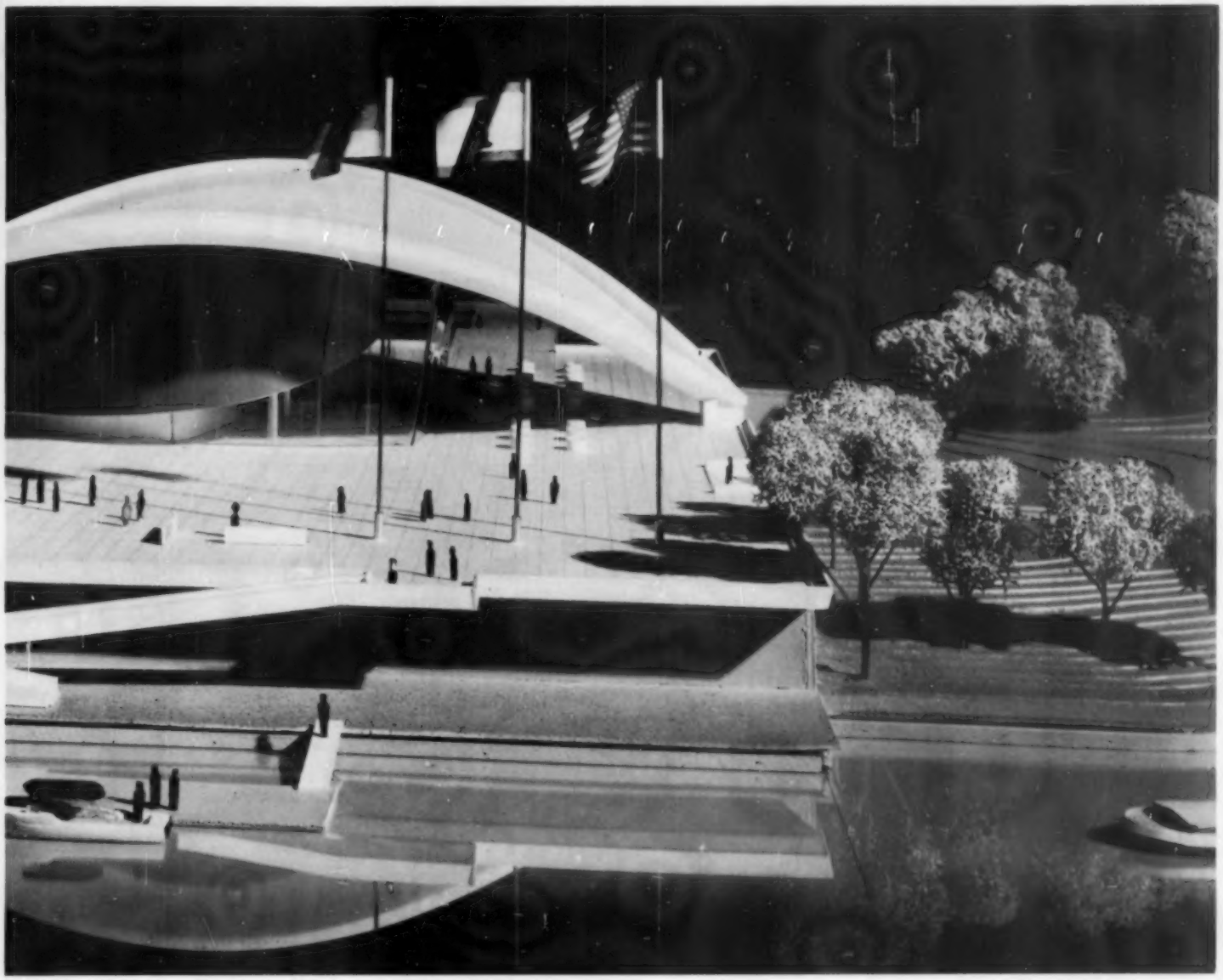
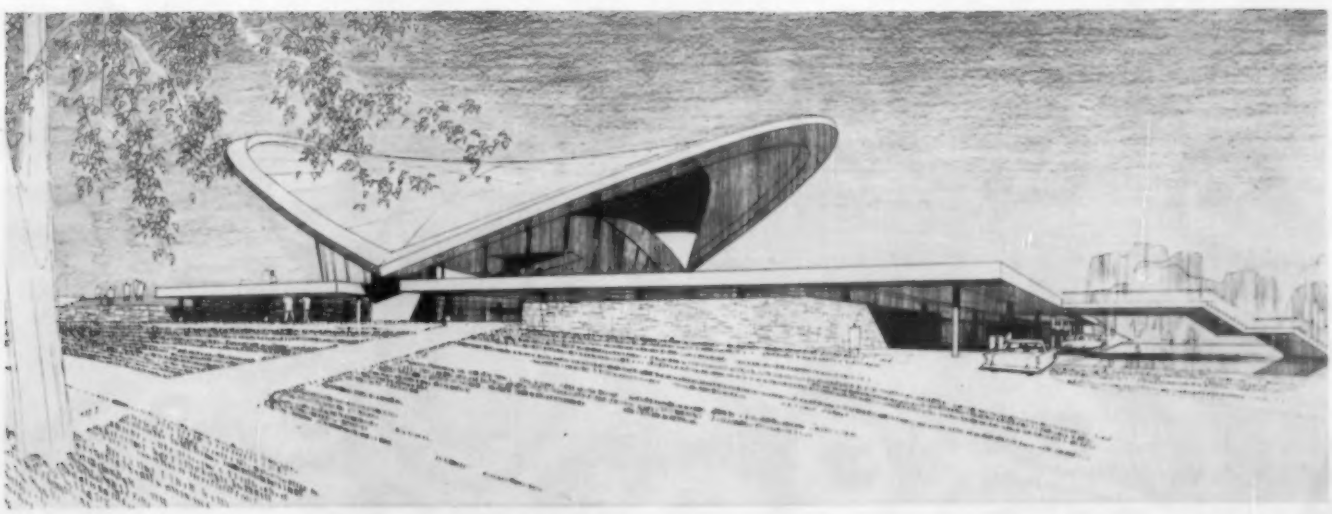


Photo: Amato

At AIA headquaters in Washington (left to right): Hugh Stubbins, architect of proposed building; Moreland G. Smith; Mrs. Eleanor Dulles, U.S. Department of State; Howard Eichenbaum; Ralph Walker.

Hung roof over auditorium, extending to cover partially upper-level platform, is supported by two arches and a compression ring at top of auditorium. Ground floor houses conference and exhibit areas; escalators rise to upper lobby.





Washington Report

by Frederick Gutheim

Even though Congress appropriated $20 millions in the final days of the recent session to proceed with the design and construction of the Air Force Academy, the fact remains that the House Appropriations Committee ought to be ashamed of itself for having wasted the taxpayer's dollars by interfering to the extent that it did. If anyone, including Frank Lloyd Wright, thinks the behavior of Congress in this matter during July improved the chances that the Air Force's Colorado Springs campus will be a work of architectural distinction, he doesn't know Washington. A vista of architectural timidity stretches before us. Designs watered down to please mass ideas of "good taste" as interpreted on the political level will yield architectural equivalents of TV programs, Buick cars, or novels like "The Robe"—formulas guaranteed to please the public.

The first mistake was made by the Air Force in sending photos of a preliminary model to the Hill. Such early studies have no business out of the drafting room. Misunderstanding and dissatisfaction with this proved the spark that fanned into Congressional expressions of disapproval. The second mistake was made by both House and Senate in providing a sounding board for Wright and others. To castigate the embryonic designs as "a birdman's factory" or a "glassified box on stilts" was an expression of dislike, not a comment on architectural competence.

When the Air Force chose its architects, my comments on the method of selection (September 1954 P/A) noted that the Selection Board left the architect of its choice without a client, so to speak; that there was no "responsibility for the choice of an architect lodged in some individual government officer with a continuing interest in the quality of the work." Where was that Selection Board during the late row?

On the Congressional side, we must face the fact that House and Senate are poor bodies to act on cultural questions. The history of parliamentary assemblies is well furnished with examples of intelligent men making fools of themselves when matters of taste are subjected to political judgment. This is particularly the case when innovations are proposed. The most that can be expected of our Congressmen is that through a decent restraint they create a sympathetic environment for creative solutions when they are needed, and not constitute still another hurdle which administrators and their architects must clear. The public should demand that its officials assume such roles.

NOTES FROM ABROAD

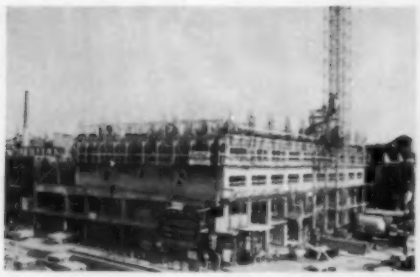
Washingtonians would do well to read the new book by Christopher Tunnard and Henry Hope Reed, called "American Skyline," published by Houghton-Mifflin. One of its themes is the revival of public architecture, to which the question of official understanding and responsibility raised by the Air Force Academy furore is closely linked. This was also the objective of an exhibition I saw last month in London by the MARS group, British branch of CIAM. In both, exhortation is the note. One is confronted with examples of good public architecture of other times (in the book) or of other places (in the exhibition). Then, having been shown the light, it is expected that the client will conform. This is a great oversimplification of the architectural problem, of course.

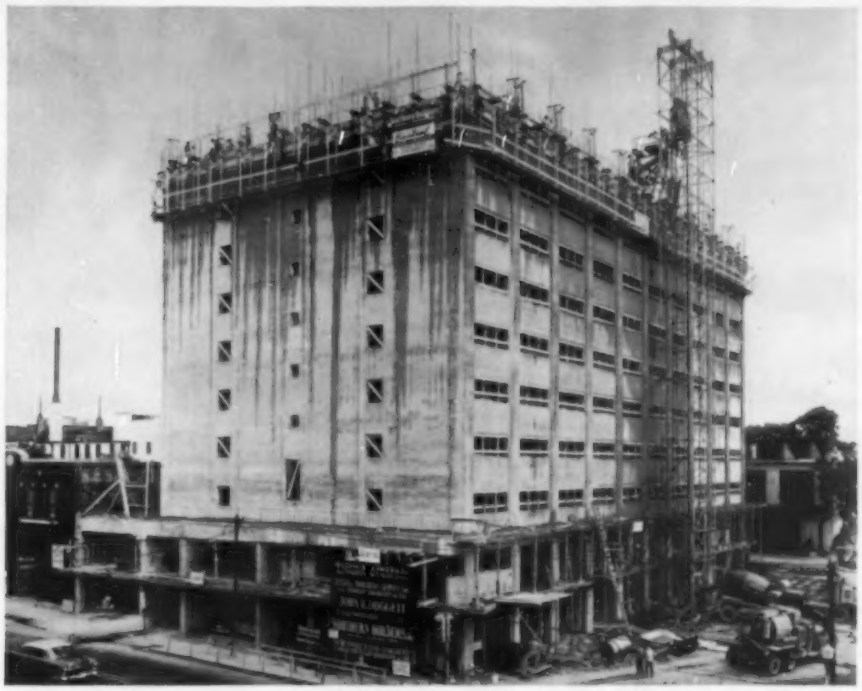
• As for the MARS group exhibition, I regret that so few extenuations can be found. It was a poor successor to the group's brilliant London regional-planning exhibition before the war. Conceived as a protest against the low architectural standards of post-war building in London, its best feature was its location in the Royal Exchange, in the worst-bombed heart of London. Here one could contrast magnificent opportunity with sorry performance in the last decade. Despite a visible impression on officials, the exhibition had a rather poor public reception, and what it offered by way of an alternative was hardly clear or acceptable.

• His chapel at Ronchamp is the sharpest indication yet of Le Corbusier's architectural change of life. The period since the UN designs has been marked by three great original concepts: his skyscraper housing project at Marseilles; this chapel, in the south of France; and Chandigarh, capital of the New Indian State of East Punjab. All are at variance with his earlier work, in their sculptured surfaces, brightly colored walls, complexity of spatial elements, and appreciation of the tactile values of wood and organic materials—qualities of architecture which had been rejected by the younger Le Corbusier.

The chapel, actually conceived before work commenced on Chandigarh, is the building whose plasticity unites the painter and the architect more nearly than any of his other work, and establishes Corbu as an artist of rank equivalent to Picasso. His forthcoming book (to be titled "The Right Angle"; probable 1956 publication) ought to provide a characteristic rationalization of this change. Most of it is written in verse.

Photos: Robert Doisneau of Rapho-Guillumette





8 Stories Raised in 5 Days

by Guy Northrop, Jr.

MEMPHIS, TENN., August 1—Slip-form construction recently made its successful United States debut in the field of apartment construction when the 8-story concrete shell of the upper floors of a 10-story apartment hotel—Madison Towers—was raised here in 115 hours, less than five days!

While the slip-form idea was not new and although apartment buildings had been built in Europe with such forms, there was skepticism in the U. S. about both safety and savings. Until they saw the 10-story Madison Towers standing hard and dry, many in Memphis doubted that still-wet concrete, emerging beneath the rising four-ft high slip forms, could hold its own weight plus that of the work platform above.

The general contractor (Southern Builders, Inc., Harry Bloomfield, president) was already familiar with slip forms, having built silos, grain elevators, and a multistory Memphis parking garage by the continuous-concrete-pouring method.

Southern Builders and the architect, John H. Doggett, had the co-operation of B. M. Heede, Inc., of New York and Stockholm, Sweden, in planning the first such slip-form project in the U. S. Heede, holder of world patents on "Concretor" hydraulic jacks, supplied the 210 jacks and yokes, the jack rods, and the three hydraulic pumps which raised the 150′ x 60′ slip-form platform.

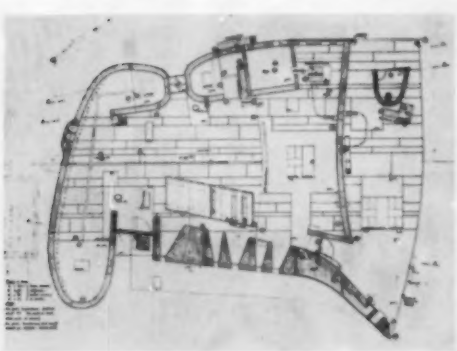
Both the contractor and Heede were anxious to prove the economy of speed. They estimated a saving of about 10 percent on labor and a saving of from three to five months in time, presumably permitting the owner, Kemmons Wilson, to get a quicker return on his investment.

A basement and the first two stories had been constructed by conventional means beforehand, to provide a three-story off-street parking area and space for four ground-floor shops.

The slip forms were arranged in plan so that they enclosed 20 apartments, a central corridor, two stair wells, and two elevator shafts. At each floor level, wood forms inserted in the slip forms framed 26 windows, 22 permanent doors, 18 temporary work entrances, and about 400 other work openings used later for anchoring floors and placing air conditioning, heating, plumbing, and electrical outlets. The hydraulically lifted slip forms went up without a hitch. Pumps sent the jacks up at a speed varying from 6 to 15 in. an hour, allowing concrete to set within the forms about two to four hours. Near the windup, the forms were lifted an inch every two minutes but this was for a very brief period only.

Having reached the top, the work platform became the support for the concrete roof, which was formed with apertures over each cell or shaft. Floor forms were lowered by cables through these roof holes and similar holes in each floor, so that one form could be used all the way down to the starting third-floor level. Each floor was permitted to set about five days.

With the successful result of slip-form work on Madison Towers, the architect and contractor promptly announced adaptation of plans for apartments they are developing for Knoxville and Chattanooga, Tennessee, to the slip-form method.



Taken from an original drawing by Le Corbusier, the plan (left) *of the Ronchamp Chapel referred to by Gutheim* (acrosspage) *helps explain the apparent irrelevance between the different exterior views shown here.*

News Bulletins

• Representatives from 22 nations, including U. S., will meet in Caracas, Venezuela, September 19-28, for Ninth PanAmerican Congress of Architects. Conferences and exhibitions are planned to facilitate interchange of information between participating countries. . . . Fourth Annual Conference for Architects is scheduled for October 18-20 at University of Illinois. Theme—"Integration of Contemporary Esthetics and Building Techniques"—will also cover physiology of seeing, color, form, and the importance of form and space in architecture. . . . Building Research Institute's Conference on Metal Curtain Walls has been extended to two days, September 28-29, and will take place in the National Academy of Sciences, Washington, D. C.

• Final and complete design of U. S. Air Force Academy will be on view at Museum of Modern Art, New York, October 18-November 27. . . . "Built in Latin America," Henry-Russell Hitchcock's selection of outstanding examples of Latin American architecture, will be exhibited at the Museum from November 23-February 30.

Walter Gropius will receive his sixth Honorary Doctorate from Council of Brazilian University in Rio de Janeiro when title Douter Honoris Causa is conferred. He has previously been honored in Germany, Australia, and by three universities in the United States.

• Closing date for U.S.A. TOMORROW'S Manhattan Redevelopment Competition (announced in July 1955 P/A) has been extended to June 1, 1956. Competition now has approval of AIA, RIBA, and International Union of Architects.

• Construction expenditures for July rose to new monthly peak of nearly $4 billions and boosted expected annual rate to $42 billions, according to preliminary estimates from U. S. Depts. of Commerce and Labor. Major portion of 4% increase over June figures is due to expansion in private home construction, commercial building, and highway work.

• Announced August 17 by Union Carbide & Carbon Corp. were preliminary plans for a $40-millions building in New York to occupy the block between Park and Madison Aves., 47-48 Sts. Skidmore, Owings & Merrill are the Architects: William S. Brown, Partner-in-Charge. Proposed is a 41-story tower on Park Ave. with a 13-story wing extending to Madison Ave. Corporation will occupy all of the building except for stores at street level.

Rendering: George Cooper Rudolph

• New York Palace of Progress, international merchandising mart and world's fair, to rise on Manhattan's West Side, incorporating Penn Station. Recently released sketches from Pereira & Luckman, serving as television and electronic consultants, and William Zeckendorf, of Webb & Knapp, show

ideas for automatic control (above) of traffic flow besides complex facilities for videal visitors' directory, TV ordering of commercial and industrial products, and TV production center. Structure (not yet frozen) is being designed by I. M. Pei and Lester C. Tichy.

• International Union of Architects, meeting in The Netherlands this summer, elected as officers for 1955-57: President, Jean Tschumi of Switzerland; Vice-Presidents, Giovanni B. Ceas of Italy, Arkadi Mordvinov of U.S.S.R., and Ralph Walker of U.S.; Secretary General, Pierre Vago of France; and Treasurer, Willy Van Hove of Belgium. Assembly also accepted invitation from Soviet section to hold 1957 Congress in Moscow and approved Swiss resolution that each country publish a guide to its contemporary architecture.

• Paul Schweikher has been named consulting architect for University of Buffalo. Position entails preliminary planning of proposed Fine Arts Center and preparation of comprehensive plan for campus development. . . . Columbia University announces appointment of Bruno Funaro as Assistant Dean of School of Architecture. . . . Louis B. Wetmore replaces retiring head, Karl B. Lohmann, at University of Illinois' Department of City Planning and Landscape Architecture.

• General Services Administration, Washington, D. C., is having plans prepared by Harrison & Abramovitz for $3.3-millions Office for U. S. Mission to United Nations in New York. . . . Voorhees, Walker, Smith & Smith will design $10-millions Atomic Energy Commission headquarters building outside Washington. . . . UCLA is having plans drawn by Smith, Powell & Morgridge for $1.5-million Sciences Graduate Research Building; by Welton Becket & Associates for $1.25-million Medical Center Pediatrics Wing; and by Staunton & Stockwell for $3.3-millions Engineering-Physical Sciences Building.

• Fernand Léger, 74, died in Gif-sur-Yvette, France, on August 17. Known for his interest in modern machine age, Léger was internationally famous as an abstract painter. He resided in New York for a number of years and created the two large murals in the United Nations General Assembly auditorium. . . . Richard Samuel Reynolds, 73, founder of Reynolds Metals Company and author of two volumes of poetry, died July 29 in Richmond, Va.

Photo: Lisanti-Alderman Photo Co., Inc.

North Carolina Gets Round Coliseum

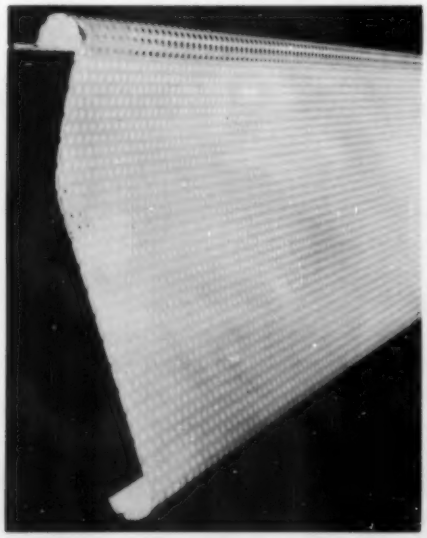
CHARLOTTE, N. C., Aug. 12—Fast taking shape in this city are two major units of a new Civic Center—the Auditorium (left of photo) to seat 2500, and the domed Coliseum. The latter, with permanent seating for 10,000 and portable seating for an additional 3500, will house all sorts of athletic events, circuses, exhibitions, etc. Site for the new center is eight acres.

The uninterrupted span of 332 ft is framed with exposed, outsloping concrete columns that support the steel-framed, aluminum-surfaced dome, whose center point rises to a height of 113 ft above floor level; the 48 perimeter columns are 53 ft tall, and their angling was specifically designed to protect the exterior walls from the weather. For details of the dome construction, see June 1955 PROGRESSIVE ARCHITECTURE (page 135).

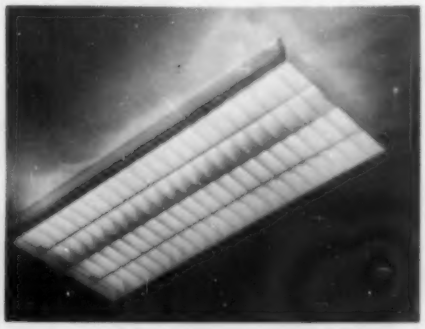
Architects and Engineers for the Coliseum are A. G. Odell, Jr. & Associates of Charlotte, Severud-Elstad-Krueger of New York are Consulting Engineers.

Multi-Lens Sheet Sidelights Fixtures

Just announced by Lightolier, Inc., Jersey City, New Jersey, new "Louvron" line of lighting fixtures, resulting from an exhaustive survey of architects' lighting needs, and based on several years of intensive engineering research.



Louvron is designed for three types of side panels, each with specific lighting performances. Innovation is "Perfalux" panel material, of perforated steel, cocooned in diffusing plastic. The plastic assumes a concave shape as it fills the perforations, converting each hole into a tiny lens, minimizing brightness contrast against dark ceilings. Other side panels are white steel for opacity, polystyrene for full-light diffusion. L.S.



Insurance Tower Scrapes Chicago Sky

Photo: Bill England, Hedrich Blessing

Nearing completion on Chicago's Michigan Avenue, the Mid-America Home Office Building for The Prudential Insurance Company of America is Chicago's tallest (41 stories) and the fifth largest office building in the United States. Naess & Murphy are the Architects; George A. Fuller Company, General Contractor.

Financial News

by William Hurd Hillyer

A news story broke in moneyed circles a few days ago revealing possibilities of co-operation between the local bank and the architect at the directors' table, as fellow upbuilders of the community. In upstate New York, a city of 10,000 had been served solely by a branch institution. Four citizens—an architect, a lawyer, a builder, and a contractor—got together and, after months of hard work, organized a $400,000 independent bank, locally owned and managed. According to its first quarterly statement this bank has attracted over a million dollars of deposits. The architect is vice-president.

As a further instance of banker-architect collaboration, one of New Hampshire's largest banks has announced a new home loan service consisting of architectural advice to construction-loan customers. A well-known architect, with his staff, will be "key man" in checking plans, helping with revisions, ensuring building-code compliance, and handling relevant problems.

A hesitant note retards the rhythm of a hitherto jubilant credit chorus, despite unslackened industrial and construction activity. Architecture, marching closely with credit, should be mindful of even so slight a disharmony. It harks from that primary level where consumers buy cars, personal cash, and household appliances on time-plan. Lenders no longer take chances; they scan each case more carefully than was their wont, Wall Street hears.

Symptomatically, a Chicago bank has cut its lending area from a 300-mile radius to 100 miles. The American Bankers Association's Installment Credit Commission calls the installment credit situation "not healthy for our economy or for banking."

At the same time, Washington officials are reported much concerned over the whole aspect of private debt, now totalling a record high of some $32 billions short-term credit plus $94 billions of mortgage obligations running to 30-year maturities. The various Federal supervisory agencies are instituting strict scrutiny of installment lending. VA and FHA down-payment requirements have been lifted 2% and terms have been shortened by five years.

The mortgage market is reported as "very uncertain," with trend toward stiffer rates accentuated by weakness of U.S. Treasury bonds—the new 3% issues breaking below par. However, the likelihood of a general construction downslip during 1955 is small, due to the unexampled impetus of business expansion. Factually, the Washington State Bankers Association's membership questionnaire reveals no fear of overbuilding.

Despite the rocketing of "non-farm" mortgages—up a billion dollars per three-month moving average since this time last year—saturation of residential construction is not yet in sight. This view is shared by Prudential Insurance Company's economist and other trained observers. Nevertheless, there are two hand-sized clouds: current shrinkage in the formation of new families and a 1% climb in rental vacancies since mid-'54.

In the business construction field, new vistas are opening up now that Congress is authorizing Federal Savings & Loan Associations to establish branches with latitude equal to that enjoyed by commercial and savings banks. These aggressive FS&L institutions, some 3400 in number and with more than $25 billions of assets, will not hesitate to take advantage of their freshly acquired branching powers.

• Thousands of new savings-and-loan structures may shortly be on architects' drafting tables. As in the case of new offices for "regular" banks ("$ Details," August 1955 P/A) these branches will require special planning on a horizontal plane. Except in congested business districts, each will be integrated with a generous ground area comprising drive-in teller facilities, parking lots, and perhaps special garages—the whole with landscaped grounds.

Photo: Marshall Brooks

First Federal Savings & Loan Association of Denver, Colo., designed by W. C. Muchow (see also page 110).

• An upward economic trend will continue through early 1956, predicts Chicago Federal Reserve Bank's chief economist. Minus-factors aside, official foreviewers can hardly be blamed for their melioristic melodies. Current statistics, as exemplified below, can scarce invoke anything else:

Industrial production tops '54 by at least 10% and is still rising with gross national product exceeding a $383 billions annual rate—$28 billions above previous twelve month;

Unemployment continues low, down substantially from last year's figures;

Steel demand holds peak around 49% above comparative 1954 totals in key industries;

Banks are putting more money into business, an $84 millions increase in the first week of August;

New public buildings are projected on a large scale, as witness Ohio's authorized $150-millions bond issue for that purpose, current heavy-construction awards are topping last year by 38%;

Retail sales outpace 1954's comparable monthly figures by around $1 billion;

Global prosperity sheds its blessing over all free countries for first time in many decades, perhaps in recorded history.

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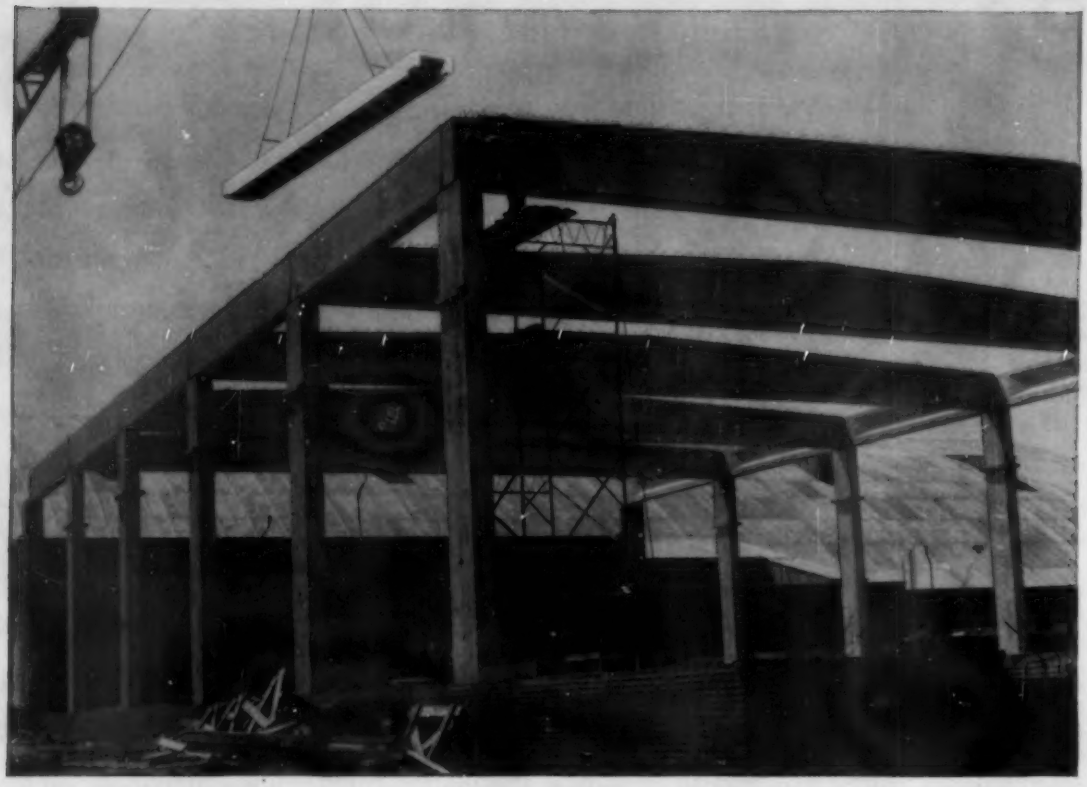
USED IN UNIVERSITY OF MARYLAND SWIMMING POOL WING



PREFABRICATION... *summa cum laude*

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Precast, prestressed girders for this 75′ x 140′ Swimming Pool Wing to the Athletic Activities Building at the University of Maryland are 75′ long, 36″ deep at ends, 4′ 7″ at center, average depth-to-span ratio approximately 1:20.

All other structural members—the 14″ x 32″ x 23′ columns, 14″ x 36″ x 23′ spandrels, and the 10″ x 24″ x 23′ channelcrete lightweight roof slabs —are precast reinforced concrete.

Designed for span and load, these factory-made members were produced to closest tolerances by the Formigli Corporation, Berlin, N. J., for fast erection—"field practical" is the term for it. Prefabrication with a *summa cum laude!*

UNIVERSITY OF MARYLAND; Swimming Pool Wing

Architect:
HALL, BORDER & DONALDSON; Baltimore, Md.

Structural Engineer:
CARL HANSEN; Silver Spring, Md.

General Contractor:
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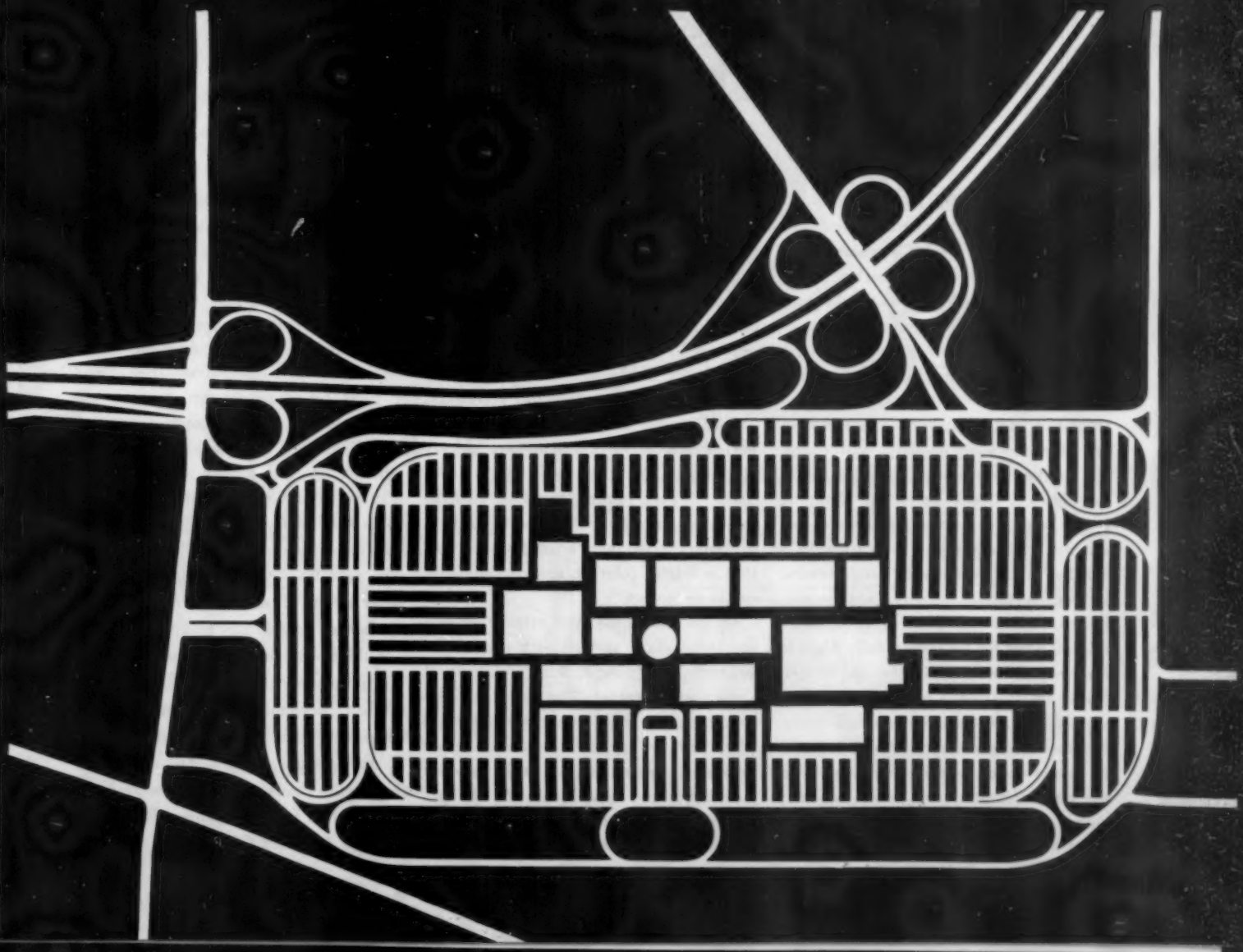
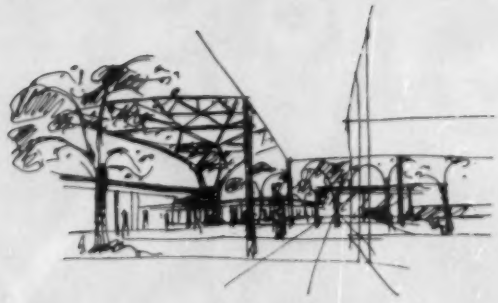
architects	I. M. Pei & Associates*
associated architects	Brugnoni & Boehler

*Architecture: O. J. Aftreth, A. P. Moore, A. N. Candido. Graphics: D. Page, G. N. Pappas.



shopping center

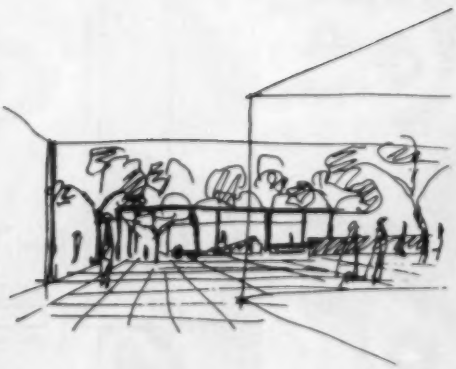


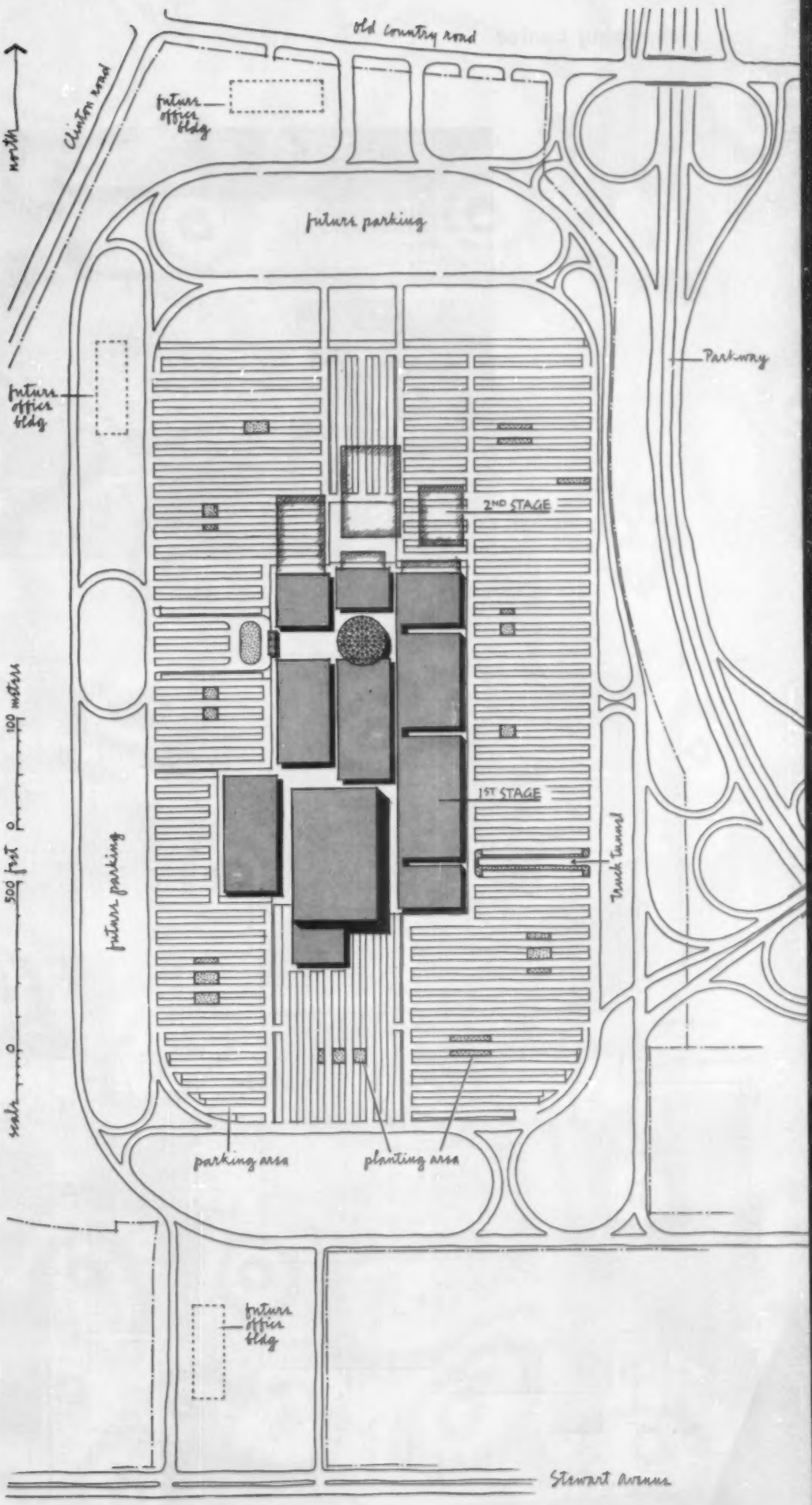
Roosevelt Field Shopping Center is located in an actively expanding commuter area serving New York City, and in the midst of growing local industries, where community facilities have not kept pace with the fantastic mushrooming of residential housing. Fortunately, the foresighted clients and architects of this shopping center have recognized the challenge and, in their plan, have gone beyond the bare provision of shops and stores. Not unlike the medieval market place or the classical Greek agora, the shopping center will also provide places for assembly and community recreation in a spirited and co-ordinated architectural setting. A former airport (widely publicized in 1927 as Charles Lindbergh's take-off point for his transoceanic flight to Paris) provides the site for the center. Major traffic arteries bound the 120-acre property on all four sides, and full cloverleaf interchanges assure free-flowing traffic in and out of the shopping area. From the circumferential ring road, cars may enter any of the parking areas, and a short walk brings shoppers to strategically placed major entrances, malls, and the stores beyond. In order to minimize walking distances from store to store and to heighten the effect of cumulative drawing power, buildings have been arranged in a compact cluster. The route of the shopper leads him through shopping streets of different widths and of varying architectural treatments, state the architects, "affording the shopper a variety of experiences in order that monotony and accompanying fatigue may be avoided. Trees, flowers, music, fountains, colorful awnings, and the bold use of graphic arts combine to create a retail atmosphere that is bright, colorful, modern, and suburban in feeling."

Of the many delightful exterior spaces, the large plaza at the north end of the property is the most striking architectural feature of the center. The plaza, partially protected by a huge umbrella of steel and glass, will be available for seasonal and continued promotions, as well as civic gatherings and exhibitions. At the opposite end of the center is located a large branch department store, occupied by R. H. Macy & Company. Skidmore, Owings & Merrill are the architects for this 3-story structure. Small tenants are given primary locations between the two central malls. Glass-enclosed escalators and stairs lead down to a concourse on the basement level. Center meeting rooms, rest rooms, post office, newspaper offices, a local broadcasting station, etc., will border this square. A continuous truck tunnel at this level services all stores without interfering with shoppers. For framing economy, speed of erection, and sales flexibility, a structural steel frame with bay sizes of 26′ x 32′ was chosen. The roof framing is a continuous cantilever system. Precast concrete slabs used as flooring permit easy tenant alterations.

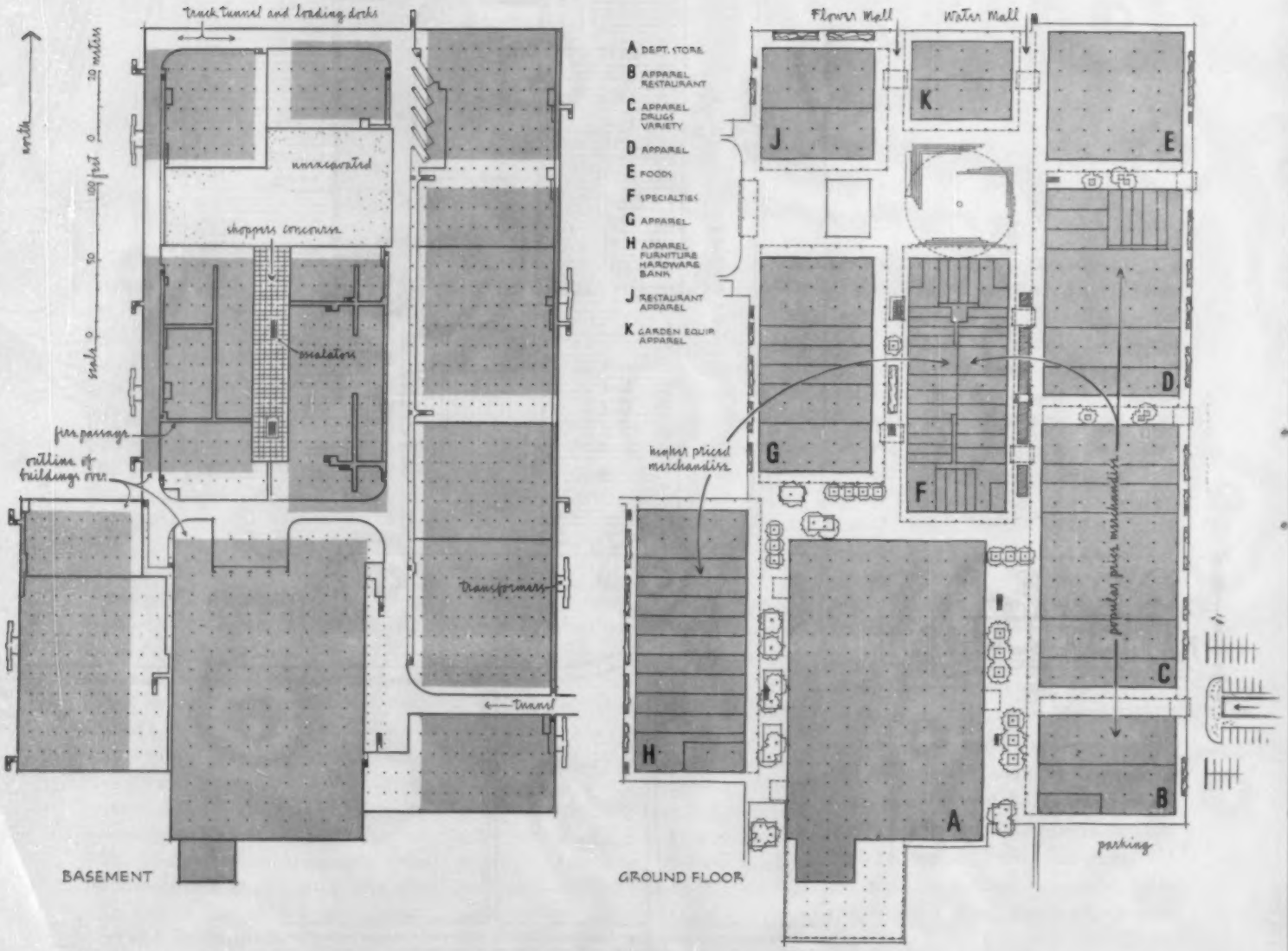
Others contributing to the success of this project are: Consultants, Larry Smith & Co.; Mechanical Engineers, Syska & Hennessy; Structural Engineers, Severud-Elstad-Krueger; Traffic Engineers, Wilbur Smith Associates; Landscape Architect, Robert L. Zion; General Contractor, George A. Fuller Co.

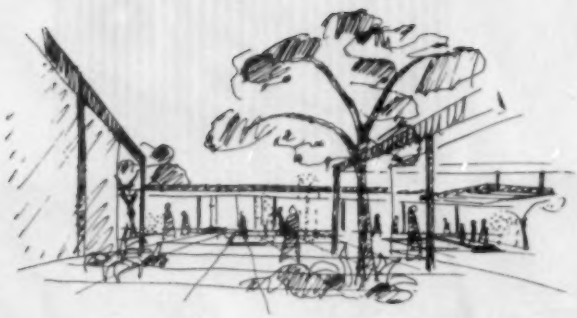
Suggested center trademark.





shopping center





Malls vary greatly in size and architectural treatment to assist shoppers in orienting themselves within this tremendous building complex. From flower mall (above) *glass-enclosed stairs and escalators lead down to a shoppers' concourse at basement level. Fountains and pools are features of the water mall* (left) *seen from parking entrance. One of the major entrance points to*

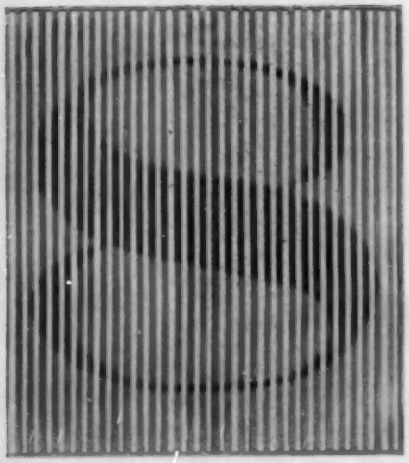
the center adjoins the large department store (above). *Large central plaza* (below), *with its huge "parasol," will be the most inviting part of the center. The scene will be further enlivened with colorful poster columns* (left bottom), *newsstands* (left), *fruit and flower carts, outdoor dining paraphernalia, and of course visitors. In the winter, pool* (foreground below) *serves as skating rink.*

Photos (except as noted): Lionel Freedman

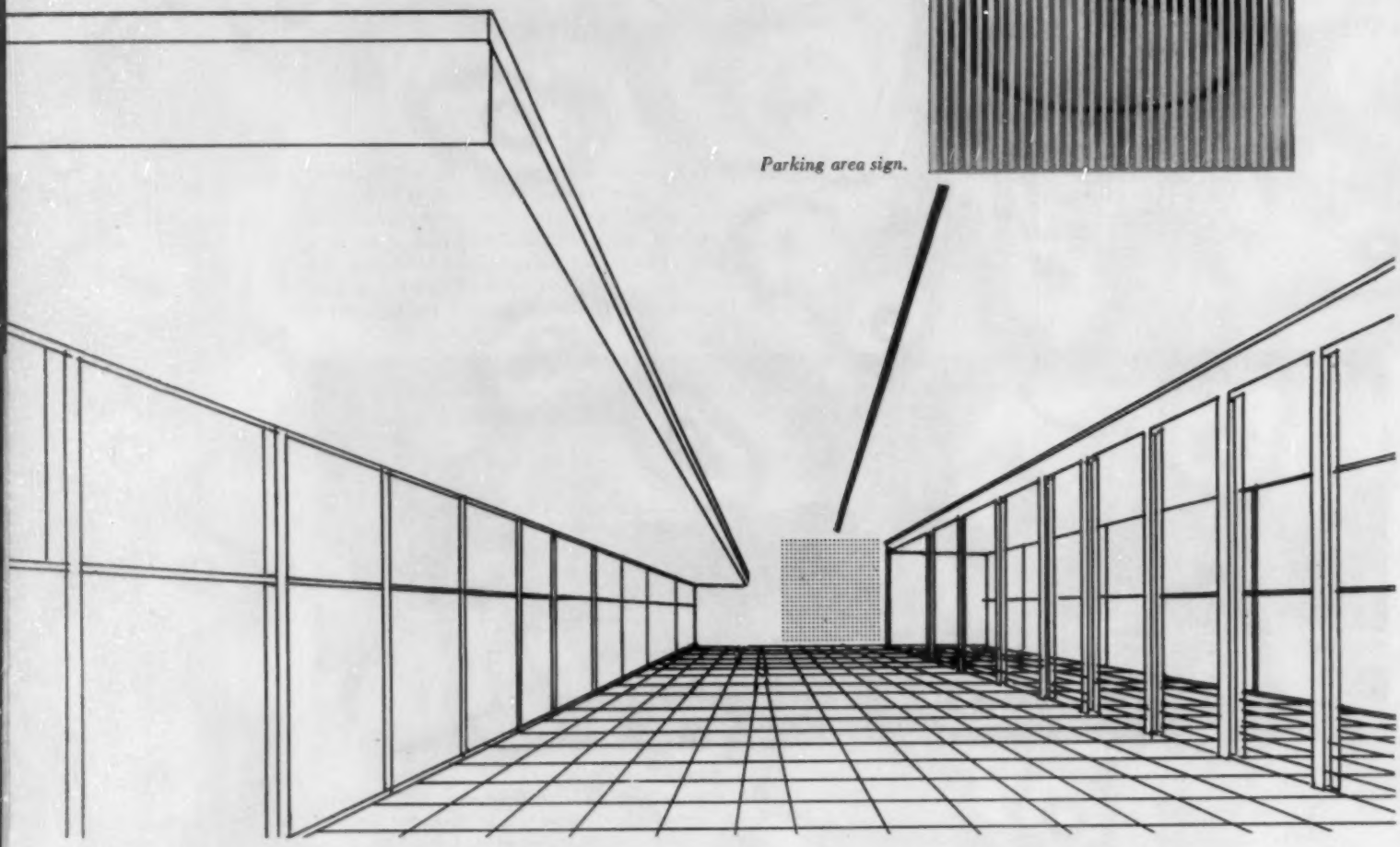
Photo: Rudy Bleston

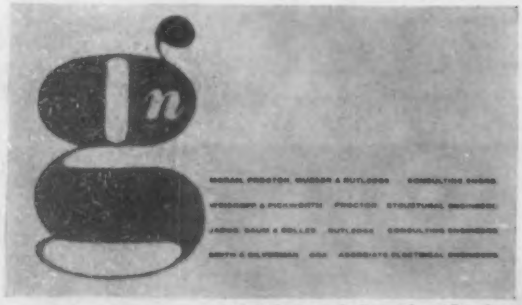
shopping center

Parking location sign.

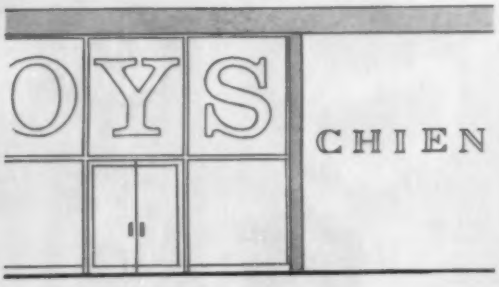


Parking area sign.

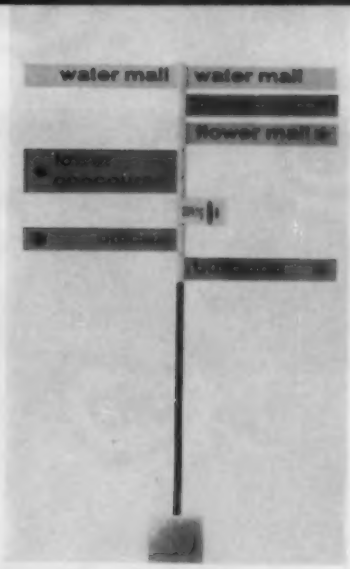




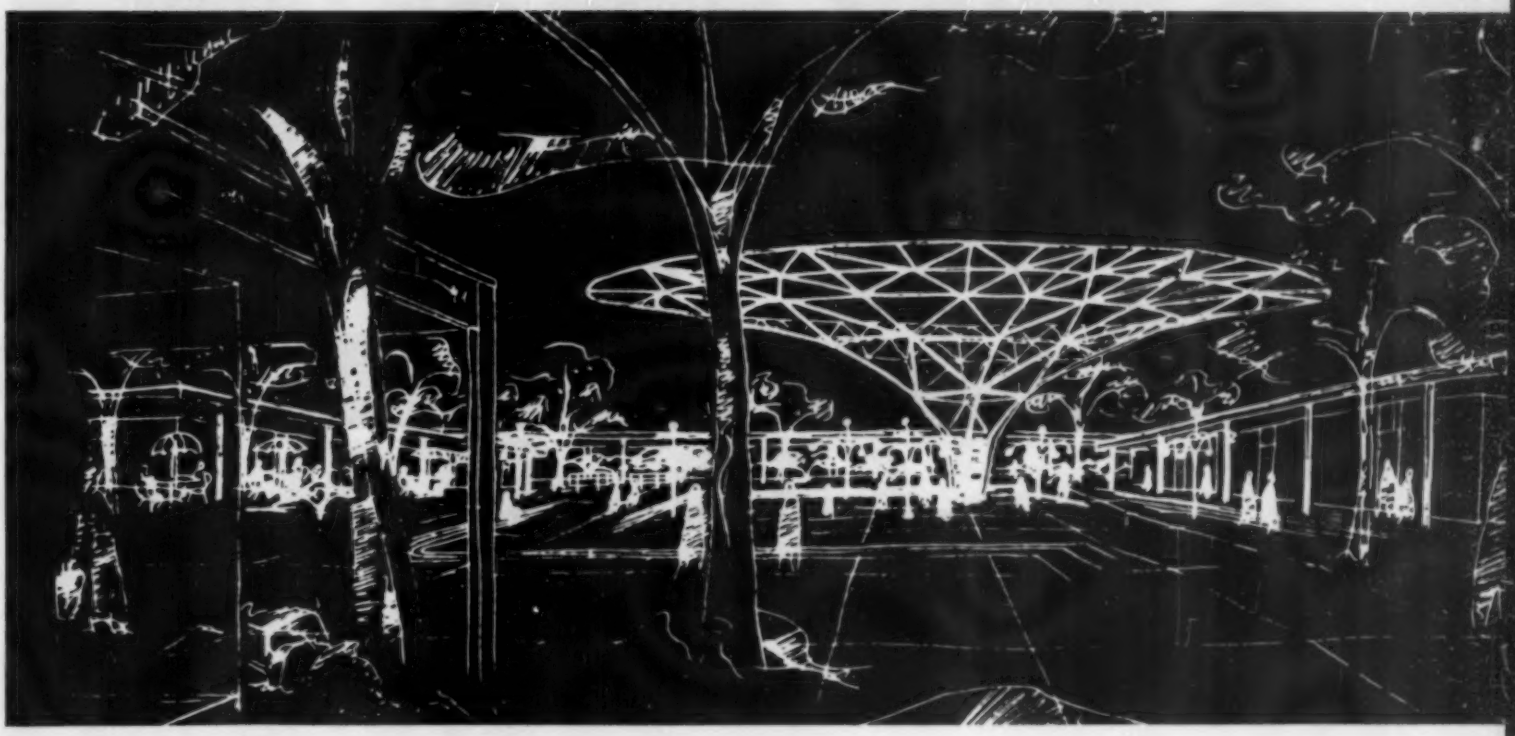
Building and shop identification.

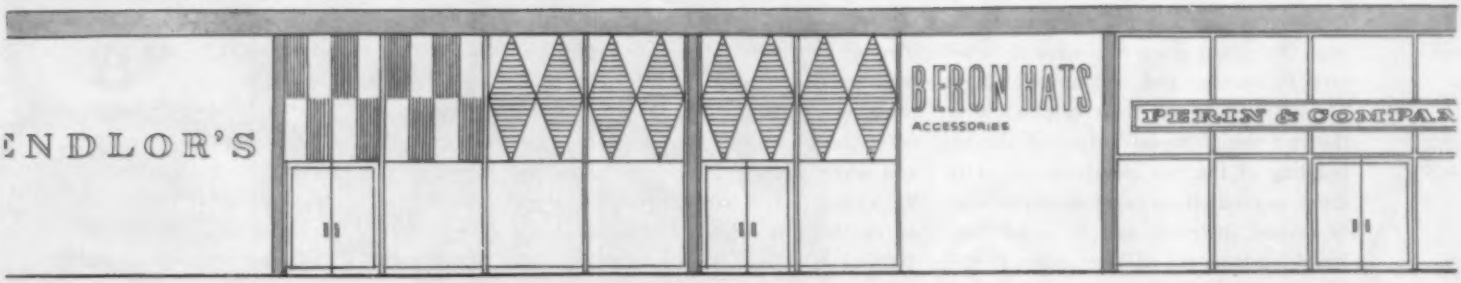


Model of lighting standard.



Internal direction sign.





Exposed structural steel module helps to co-ordinate and quiet the varied store fronts (above) *of glass and whitewashed brick. Steel columns and fascia will be painted one color to further emphasize the modular rhythm. Final designs for colorful awnings, tenant identification, lighting standards, newsstands, and signs, shown on these pages in preliminary form, will be executed and co-ordinated by the center's architect to achieve total harmony and the impression of a planned architectural unit.*

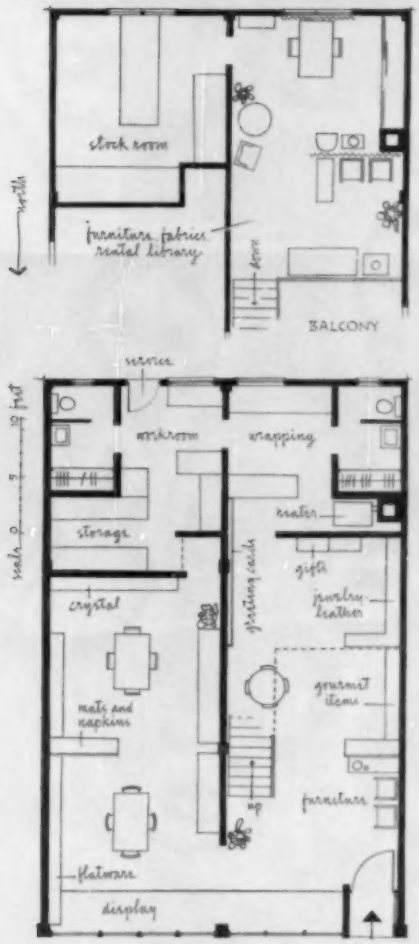
home furnishings store

location | Seattle, Washington

designers | Walter L. Kerr & James C. Egbert

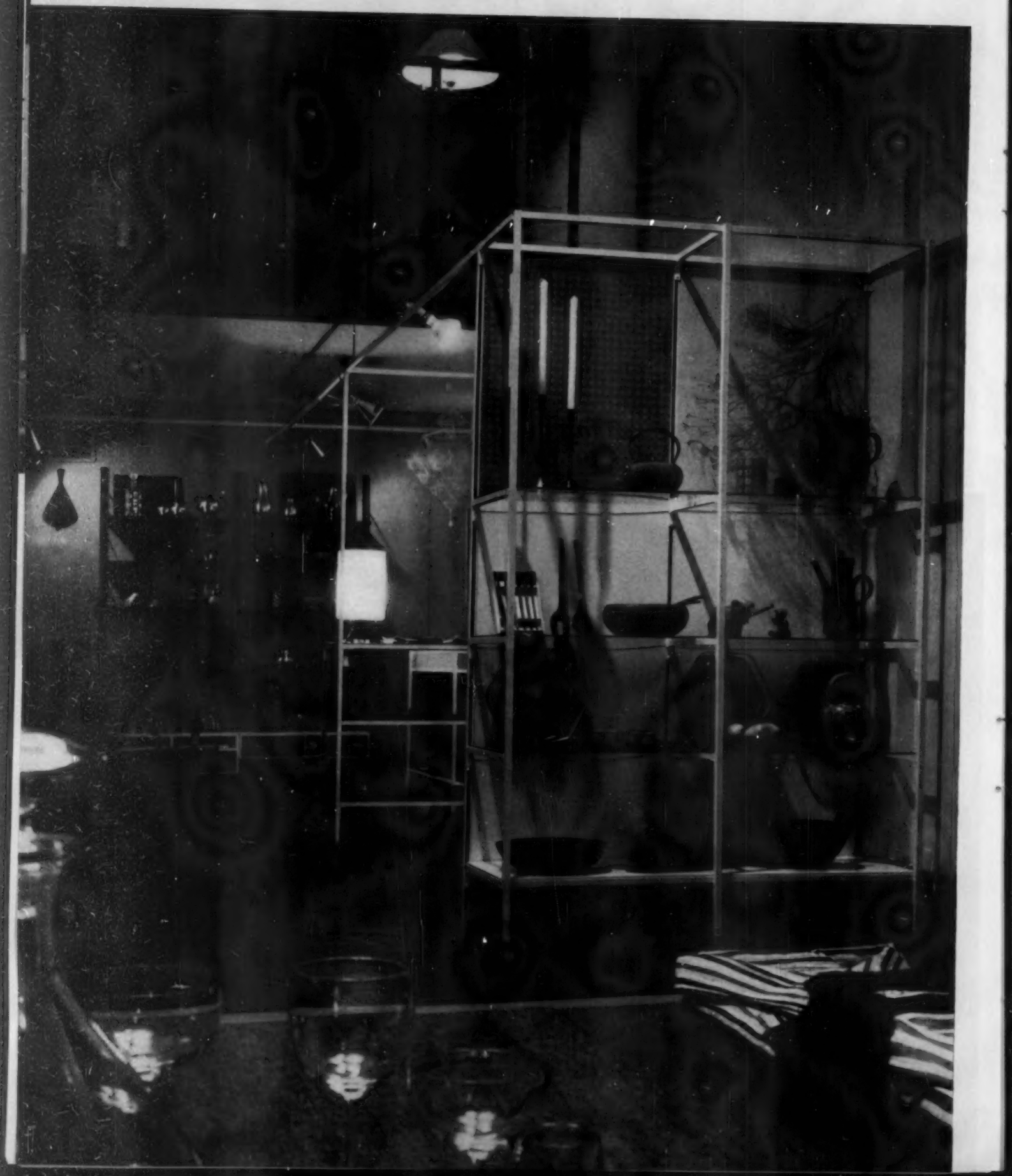
This newly remodeled sales space replaces two shops in the center of a block of identical stores, about a mile away from Seattle's main business district. Neighboring are a number of furniture showrooms and decorators' offices. Though it was not their original idea, the two designers later favored the rebuilding of the two storefronts to unify them, to relate them more closely to newly revised interiors, and to make them stand out from the adjacent stores on the blockfront. Much of the glass of the old façades was salvaged and reused with the vertical scale retained to emphasize 16 ft ceilings. Inside, all existing partitions were removed to facilitate a more appropriate arrangement and departmentalization of the 1500 sq ft area. New partitions have plain surfaces, neutral in color, to allow effective display of the merchandise on sale. Ceilings and outer walls are white. Center partition is a soft gray. Only side-walls carry fairly bright blue accents. Blue and white scheme is again repeated on the exterior. Tall vertical panel at right of entrance is white. Horizontal band dividing windows is blue. Display fixtures are constructed of standard lightweight steel channel members which were bought in 12 ft lengths, then cut to size and bolted with special patented spring-lock connections. "Nothing could take its place," say the designers of this versatile and speedy system, ideal when periodical changes are a necessity, "the ease of shelf-adjusting is a joy." Lighting too was solved simply and inexpensively. Ceiling flood lights provide general illumination; photo lamps, clamped on the channel members of the display fixtures (channels acting also as wiring raceways) spotlight individual displays. All credit for the success of this handsome and ingenious remodeling job goes to the designers, who, except for occasional help from "sympathetic friends," executed all of the work over a period of two months.

Photos: Dearborn-Massar



Floor plans (above) *were made expressly for P/A after job was completed. Designers worked from sketches on walls, sides of packing crates, and paper napkins. Stairway* (above) *hugs original partywall, now center partition of expanded store. Balcony houses furniture display area, fine arts rental library, and stockroom. Vertical scale of window wall is further emphasized by T&G cedar boards at main entrance* (left) *and suspended light fixtures.*

home furnishings store



At west end of store (acrosspage) *emphasis is on horizontal line of balcony; in eastern part* (below) *on vertical proportion of endwall. Display fixtures, illustrated in both views, are of light-weight steel channels fitted together with special bolt and spring-lock connections. Shelves and removable end panels in red, yellow, lavender, and brown, are continually changing position to suit new articles on display. Flooring is asphalt tile throughout.*

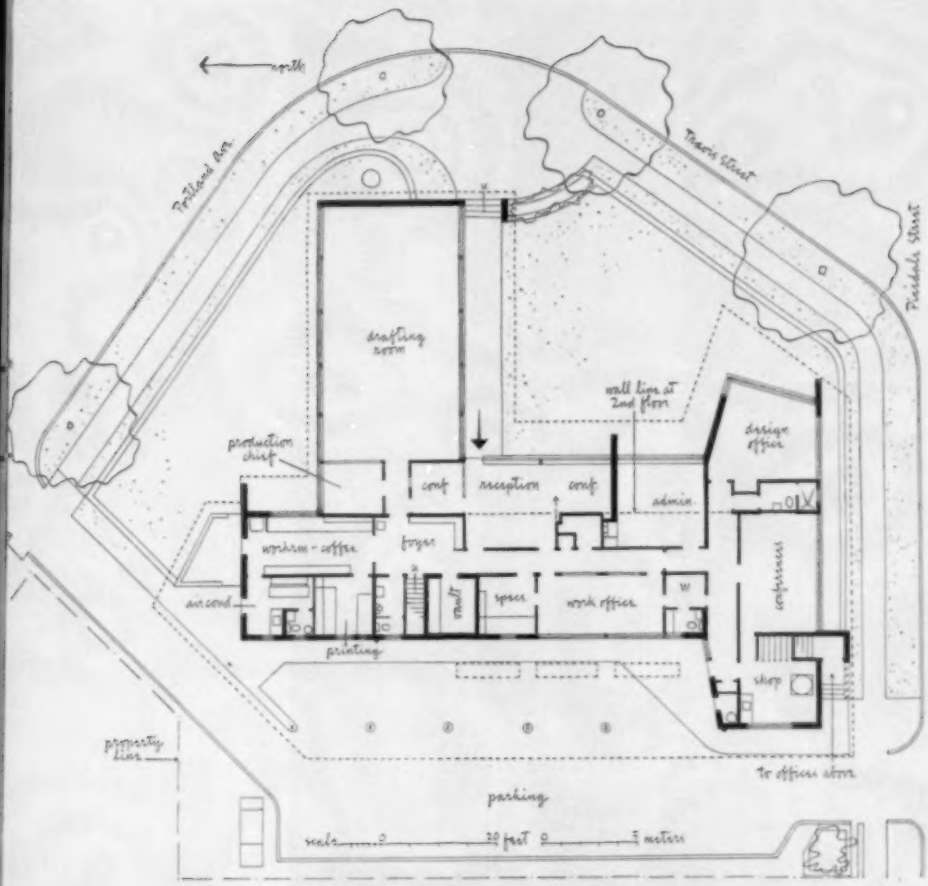
professional offices

location | Houston, Texas

architects | Golemon & Rolfe

Perhaps no design assignment more intrigues an architect than developing his own office. In the case of the office building shown here, whose second floor is occupied by Walter P. Moore, the firm's consulting structural engineer, Golemon & Rolfe have not only one of the most complete professional units in the area, but also, in Walter Rolfe's own words, "the building has proved very practical and workable. . . . It has helped make practice a thrilling adventure, and the effect upon the morale of the organization has been spontaneous and delightful." A private entrance on Pinedale Street leads directly up to the reception room of the second-floor offices.

The odd-shaped site is located in a most thriving part of Houston, where few sites of any sort are still available. Construction is mainly of wood frame, veneered with stone or brick, though some areas are framed in steel. Interior surfaces include stone, plywood, and ceramic tile. The concrete-slab floors are mostly rubber tile; wall-to-wall carpeting is used in the reception room, the large conference room, and private offices. The building is completely air conditioned and has a sprinkler system. A music system pipes muted melodies throughout the offices. General Contractor for the job was the Baxter Construction Co.

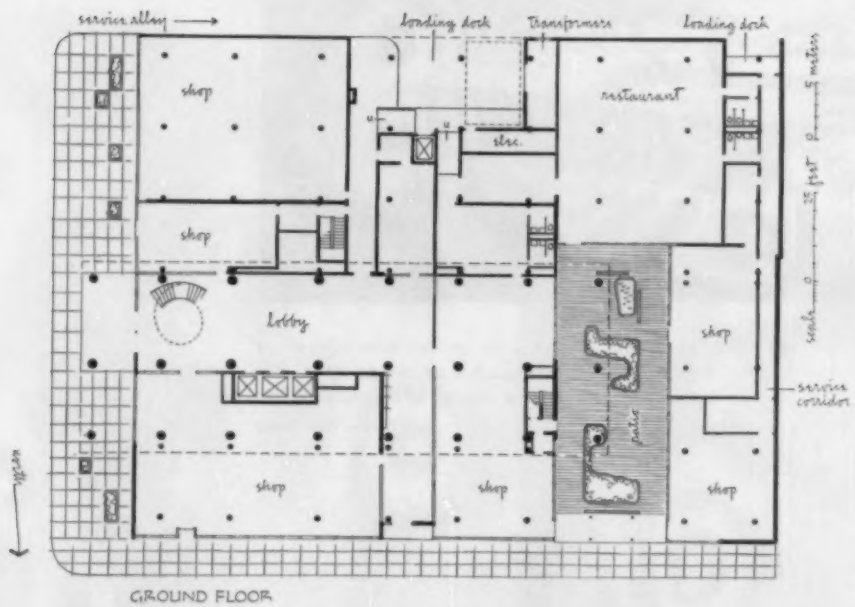


All office areas are connected by an intercom system. A large clear-glass window in the office of the Chief of Production (above) *provides visual control of the entire drafting room.*

Photos: Paul Dorsey

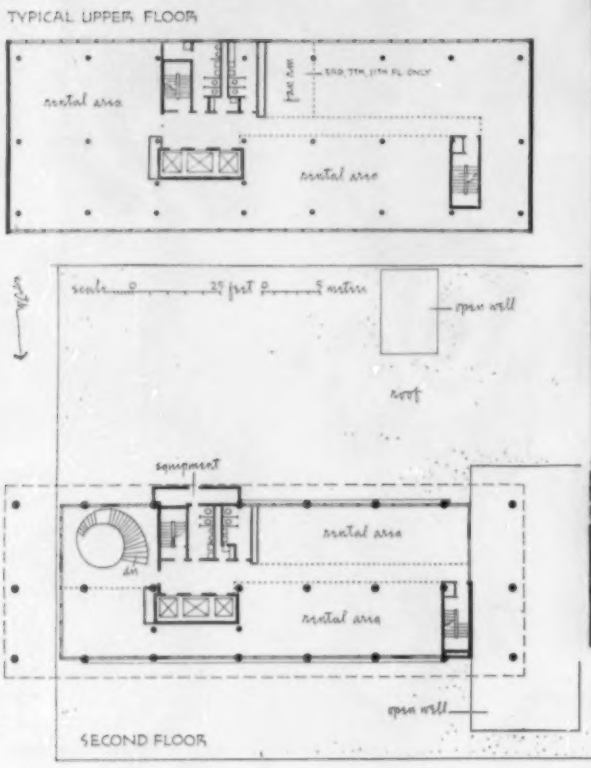
office building

location	Albuquerque, New Mexico
architects	Max Flatow & Jason Moore



GROUND FLOOR

office building



It is a strange fact that in the smaller cities generally, distinguished commercial architecture seldom appears. An outstanding exception is the Simms Building, in Albuquerque, shown on these pages. Indeed, few office buildings that we have seen are more rational, sensibly schemed structurally and mechanically, or more colorful.

A pavilion of one-story shops and a restaurant bordering a landscaped patio constitute the ground floor and visually serve as a base for the set-back, 12-story tower of rental floors. While the upper 10 floors are cantilevered beyond the column line, the second-floor wall centers on the columns, further enhancing the distinction between base and shaft. The set-back scheme, incidentally, protects the tower for all time from oppressive encroachment.

The site, at a busy intersection, has a service alley along the south side, and an existing commercial building on the west. The building is framed in reinforced concrete, employing a shallow beam and slab system. East and west walls of the tower are windowless—brick surfaced, over a backup of structural clay tile. The longer north and south walls are entirely made up of a curtain wall system of extruded aluminum frame members, insulated aluminum panels, and heat-absorbing, double insulating glazing (*see* SELECTED DETAIL). Every other pane is side pivoted to facilitate window cleaning from inside the building.

The rental floors are developed around a 2′ x 5′ module, with movable metal partions (in three basic colors, with six accent colors for trim and doors), and all utilities are spaced accordingly. A module of 5′ x 5′ applies to the ground floor, and the store fronts are so designed that glass panels, colored porcelain-enamel panels, and entrance doors to shops may be interchanged as future shifts in occupancy may require.

Albert G. Simms, the client, reports that he is "much pleased with the architectural design and the functioning of the building. . . . The colors are vivid, striking, and very pleasing, and I am proud to be the owner of this beautiful building. . ."

mechanical design

This structure contains one of the first applications combining a complete heat-pump system with radiant-panel heating and cooling. The system consists of three 100-hp refrigeration compressors (*see page 109*), two deepwells from which 67 F water is available the year around, a well-water settling tank, a well-water make-up pump, a chilled-water circulating pump, and a hot-water circulating pump.

The building's tower portion has three fan rooms serving four floors each—each fan system having a north, south, and interior zone. Zoning is designed so that heating can be delivered to the north zone at the same time that the interior and south zones are being cooled.

There are completely separate north, south, and interior zones for the 12th and 2nd floors due to the additional roof load and the different construction at 2nd floor level, the entire wall being glass. A zone thermostat located in a typical room within each zone controls the air supply temperature.

The radiant panels (*page 109* and SELECTED DETAIL) are controlled by outside temperature on the north side and by outside temperature together with a solar compensator on the south side. The solar compensator (consisting of a box with the same ratio of glass to wall area as the building and oriented in the same manner as the south wall) measures the combined effect of outside temperature and the heat gain from the sun. When the combined effect of the sun and the outside temperature gives an equivalent exposure temperature above 70 F, the

The cut red sandstone that is used for certain wall areas at ground-floor level is both utilitarian and sentimental; for it comes from the original Simms Building that was built on this site 50 years ago.
Photos: Julius Shulman

office building

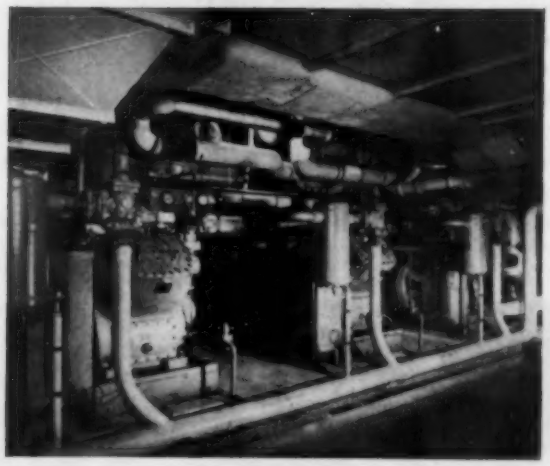
radiant panels furnish cooling; the chilled-water temperature is gradually reset to 60 F as the equivalent exposure temperature increases to 85 F. When the equivalent exposure temperature—or on the north side just plain outside temperature—drops below 70 F, the water circulated to the radiant panels provides heating; the water temperature is gradually reset to 115 F as the equivalent exposure temperature drops to 30 F.

The underlying theory of this space temperature control system is: radiant panels offset the outside weather conditions by providing either a cool panel surface adjacent to the glass area when the glass is hot due to high outside temperature and heat gain, or a warm panel surface when the glass is cold due to low outside temperature and wind. The air temperature in the zone is controlled independently by a thermostat which controls the air supply from the fan system.

The first floor is heated and cooled entirely by an air system with zones for each shop area.

The building sometimes acts as a solar heating system during winter when heat gain from solar radiation on the south side is actually used to supply heat to the north side. There are times when the cooling requirements on the south side exactly balance the heating requirements on the north side and there is no well-water make-up.

Mechanical Engineers were Bridgers & Paxton; Electrical Engineer, M. V. McIntyre; and Lembke, Clough & King, Inc., was the General Contractor.



Materials & Methods

construction

Foundation: concrete-raft footings under tower columns, spot footings under ground-floor columns. **Frame, floors, roof:** reinforced concrete: cement—Southwestern Portland Cement Company, Ideal Cement Company; cement-dispersing agent—Master Builders Company; reinforcing steel—Cobusco Steel Products Company. **Walls:** steel frame for curtain-wall system—Midwest Steel & Iron Works Company. **Wall surfacing:** exterior: curtain-wall system—Fentron Industries, Inc., aluminum spandrel panels—Aluminum Company of America, porcelain-enamel panels—California Metal Enameling Company, brick (end walls)—Los Angeles Brick & Clay Products Company; interior: gypsum plaster—United States Gypsum Company, marble (lobby)—Locarni Marble Company; rest rooms, toilets: ceramic tile—The Mosaic Tile Company. **Floor surfacing:** ground floor: terrazzo—Art Terrazzo & Tile Company; office area: vinyl tile—Wright Manufacturing Company, asphalt tile—Hachmeister, Inc.; toilets: ceramic tile—The Mosaic Tile Company. **Ceiling surfacing:** ground floor: acoustical plaster—United States Gypsum Company; office area: acoustical tile—The Celotex Corporation, suspended-ceiling system—Sanymetal Products Company, Inc. **Roof surfacing:** crushed brick on coal-tar pitch—The Ruberoid Company; quarry tile—Art Terrazzo & Tile Company. **Waterproofing & dampproofing:** membrane waterproofing—The Ruberoid Company. **Insulation:** thermal: glass-fiber batts and semirigid spandrel panels—Owens-Corning Fiberglas Corporation. **Roof drainage:** interior drains—J. A. Zurn Manufacturing Company. **Partitions:** office area: movable metal—E. F. Hauserman Company; toilets: porcelain enamel—Sanymetal Products Company, Inc. **Windows:** aluminum pivot sash—Fentron Industries, Inc.; heat-absorbing insulating glass—Glass Division of Pittsburgh Plate Glass Company; aluminum store fronts—The Hollobilt Company; plastic-dome skylights—Wasco Flashing Company. **Doors:** interior: hollow metal—Niedringhaus Metal Products Company; elevator: passenger—Art Metal Construction Company, freight—Security Fire Door Company; entrance: tempered-plate glass—Pittsburgh Plate Glass Company. **Hardware:** aluminum—Russell & Erwin Division of The American Hardware Corporation. **Paint & stain:** The Glidden Company.

equipment

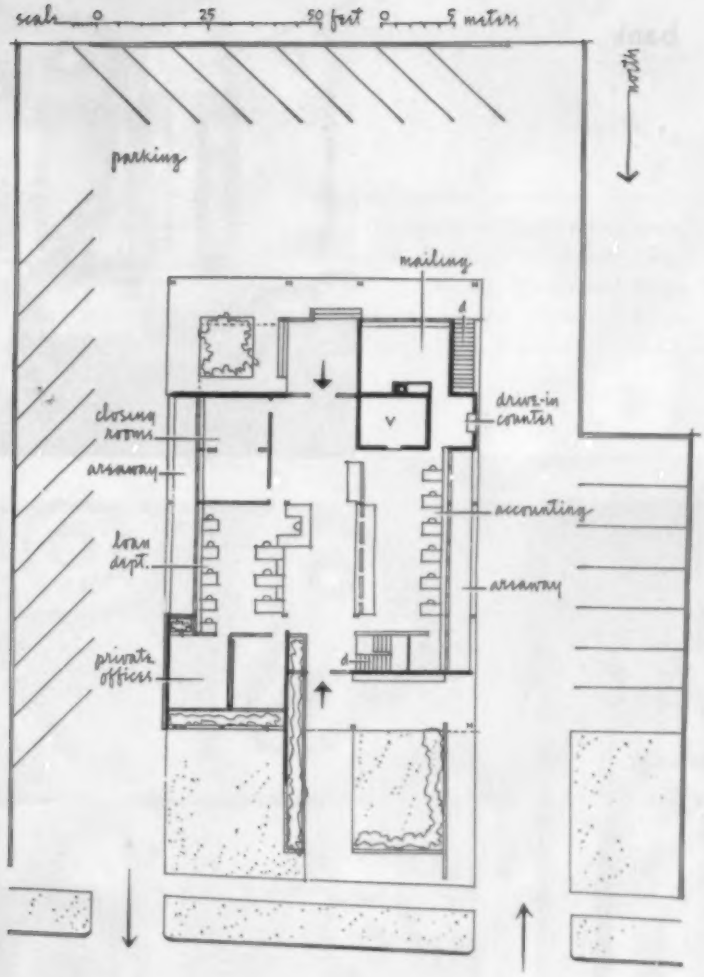
Special equipment: mail chute—Cutler Mail Chute Company. **Elevators:** passenger—The Hunter-Hayes Company; freight—Rotary Lift Company. **Lighting fixtures:** recessed fluorescent (office area) and surface-mounted fluorescent (lobby area)—Day-Brite Lighting, Inc.; recessed incandescent (corridors)—Holophane Company, Inc.; incandescent plastic bubbles (restaurant)—Howard Miller Clock Company. **Electric distribution:** main switchgear, motor-control center, unit substation, lighting panels, and feeder ducts—Federal Pacific Electric Company; low-voltage switching—General Electric Company; wiring devices—Harvey Hubbell, Inc. **Plumbing & sanitary:** waterclosets and lavatories—American Radiator & Standard Sanitary Corporation; fixture hangers—J. A. Zurn Manufacturing Company; toilet seats—C. F. Church Manufacturing Company; domestic hot-water supply obtained from mechanical system of heat pump; flush valves—Imperial Brass Manufacturing Company; accessories—Miami Cabinet Division of The Philip Carey Manufacturing Company; wrought-iron pipe—A. M. Byers Company; fire-hose cabinets—W. D. Allen Manufacturing Company; standpipe and siamese—M. Greenberg's Sons. **Heating & air conditioning:** type: heat pump; refrigeration equipment—Worthington Corporation; central fan system, cooling and heating coils—Aerofin Corporation; copper piping for radiant-heating coils—Wolverine Tube Division of Calumet & Hecla, Inc.; circulating and deep-well pumps—Peerless Pump Division of Food Machinery and Chemical Corporation; ceiling diffusers—Anemostat Corporation of America; wall registers—Air Factors, Inc.; air-distribution fan blowers—American Blower Corporation; controls—Johnson Service Company.

bank

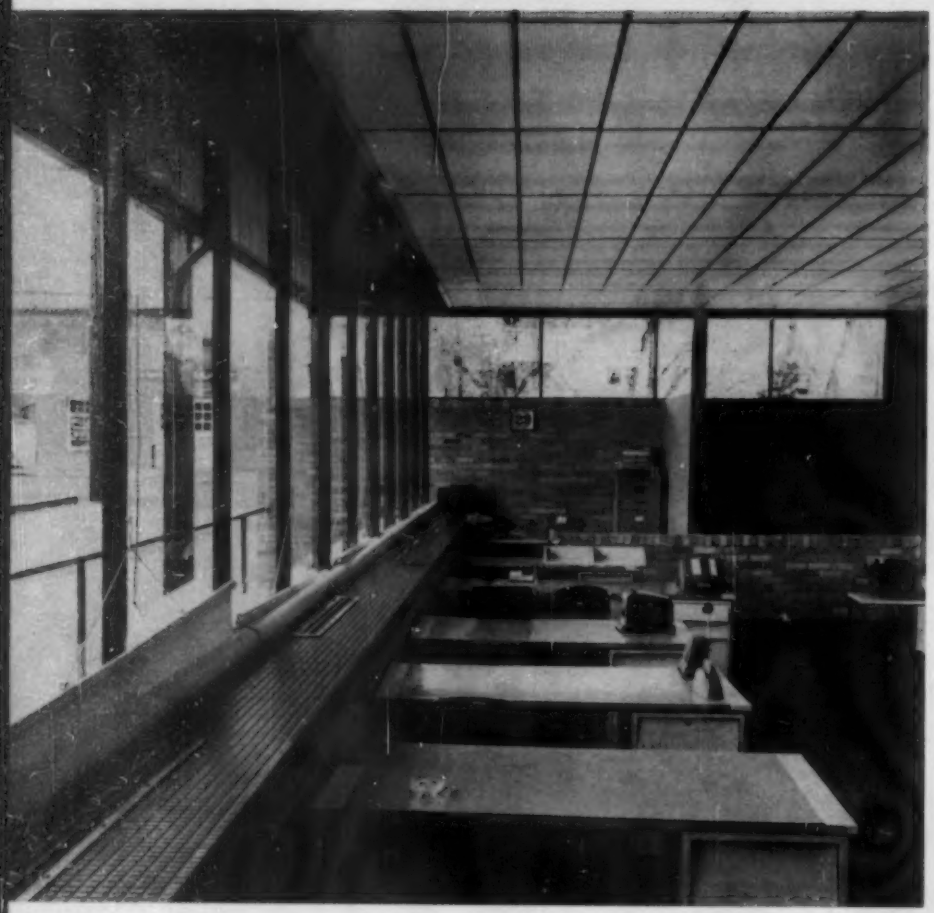
location | Denver, Colorado
architect | W. C. Muchow

To free the building from adjoining structures that extend along the front property line of a typical, commercial strip development, the architect has placed this new bank in the center of a 182 ft x 150 ft plot. A pleasant entrance court facing the street was thus possible, leaving ample space around three sides of the property for parking and easy maneuvering of cars. The site drops 7 ft to the rear property line, bordering an alley into which access was necessary. A second entrance, again with landscaped entrance court, faces this rear alley and parking area. The structure is a simple, rectangular steel frame which will permit future changes within the building, should they become necessary. In contrast to the unbroken roofline, and the regular steel module, the architect has recessed the various exterior wall planes "to create a feeling of depth." Inside, a sense of spaciousness has been achieved by using low counter partitions, a great deal of glass, and clear, light colors. Doors, counter tops, and desk tops are a Swedish blue. Furniture and tellers' units are of bleached oak. The ceiling is rust colored and the floor of black plastic tile. Brick on exterior and interior is of a golden color and structural steel has been painted black.

Structurally, basement walls, columns, and first floor slabs are of reinforced concrete. To avoid drop beams in the basement, eventually to be a finished area, column heads were lowered by 6 in. and floor slabs splayed. Columns at the first floor level are 8″ x 8″ WF members.



Plan (above) *has not changed appreciably since this bank was awarded a citation in P/A's Awards Program and presented in project form in the January 1954 issue. Two equally important entrances, one facing the street* (left and acrosspage bottom), *the other facing the parking area and rear alley* (acrosspage top), *lead into a central lobby—the public space of the bank. A special "drive-in" counter faces west onto the driveway.* Photos: Erwin Lang



Public space of bank extends through entire building and is directly accessible from the south entrance (top) *as well as north-facing street entrance* (below). *Glass area in accounting department* (left) *is protected from the western sun by a wide overhang and adjustable shades. Duct space for perimeter heating and air-conditioning system is directly under windows. Return air is taken through grills above the vault. Custom designed teller's desks* (acrosspage) *are of bleached oak with blue plastic counter tops.*

Roof framing consists of steel channels and 12″ bar joists, spaced 2′-0″ o.c. A 3½″ lightweight, insulated concrete slab topped with reflective insulation, and tar and gravel forms 5-ply built-up roofing.

In the work area an even level of illumination has been achieved by a luminous ceiling of plastic louver-diffusers which are supported on inverted T-rails suspended from above. Both suspended and recessed fixtures light public areas. This space is acoustically treated with sprayed-on asbestos insulation. Contributing to the success of this building were: Ketchum & Konkel, Structural Engineers; M. S. Wilson, Mechanical Engineer; Swanson & Rink, Electrical Engineers; Olson & Hart, General Contractor.

location | Charlotte, North Carolina

architects | A. G. Odell, Jr., & Associates

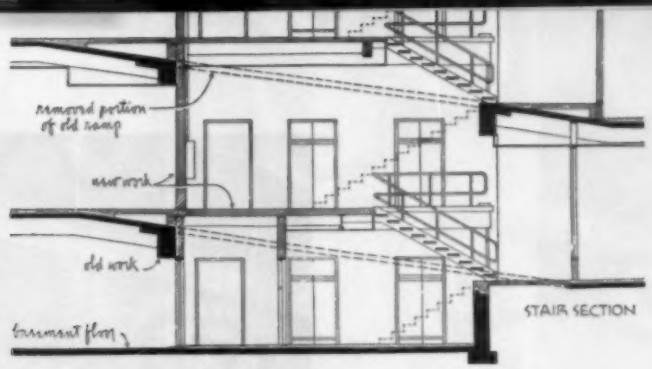
remodeled office building

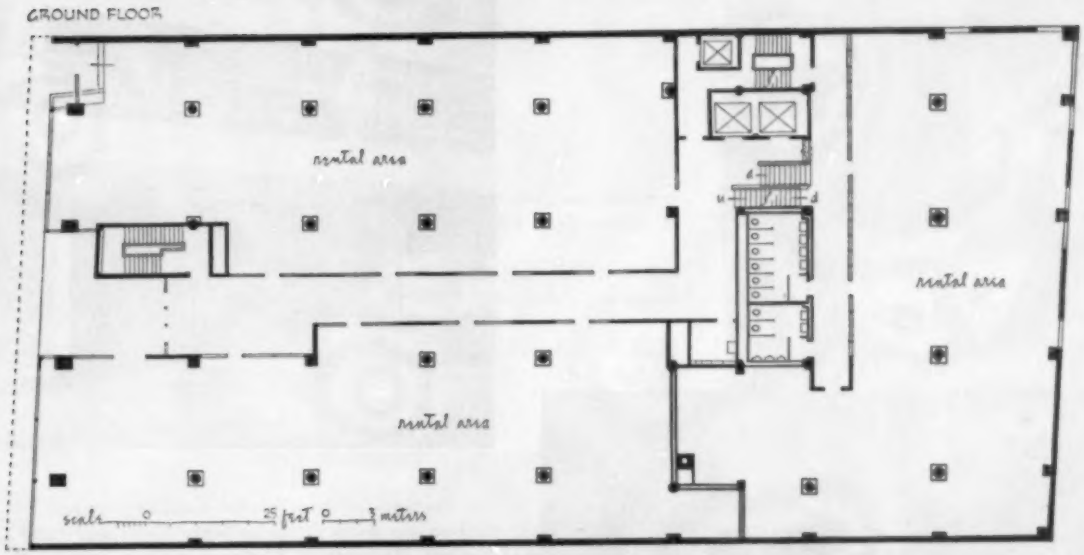
The Addison Building must surely be one of the most remarkable and extensive remodeling jobs of a reinforced-concrete structure on record. The five-story building, located just one block from Charlotte's business center, had been a parking garage *(see snapshots)*. And a spiral, auto-access ramp occurred throughout, resulting in a split-level scheme, with one third of each floor area about 5½ ft lower than the other two thirds.

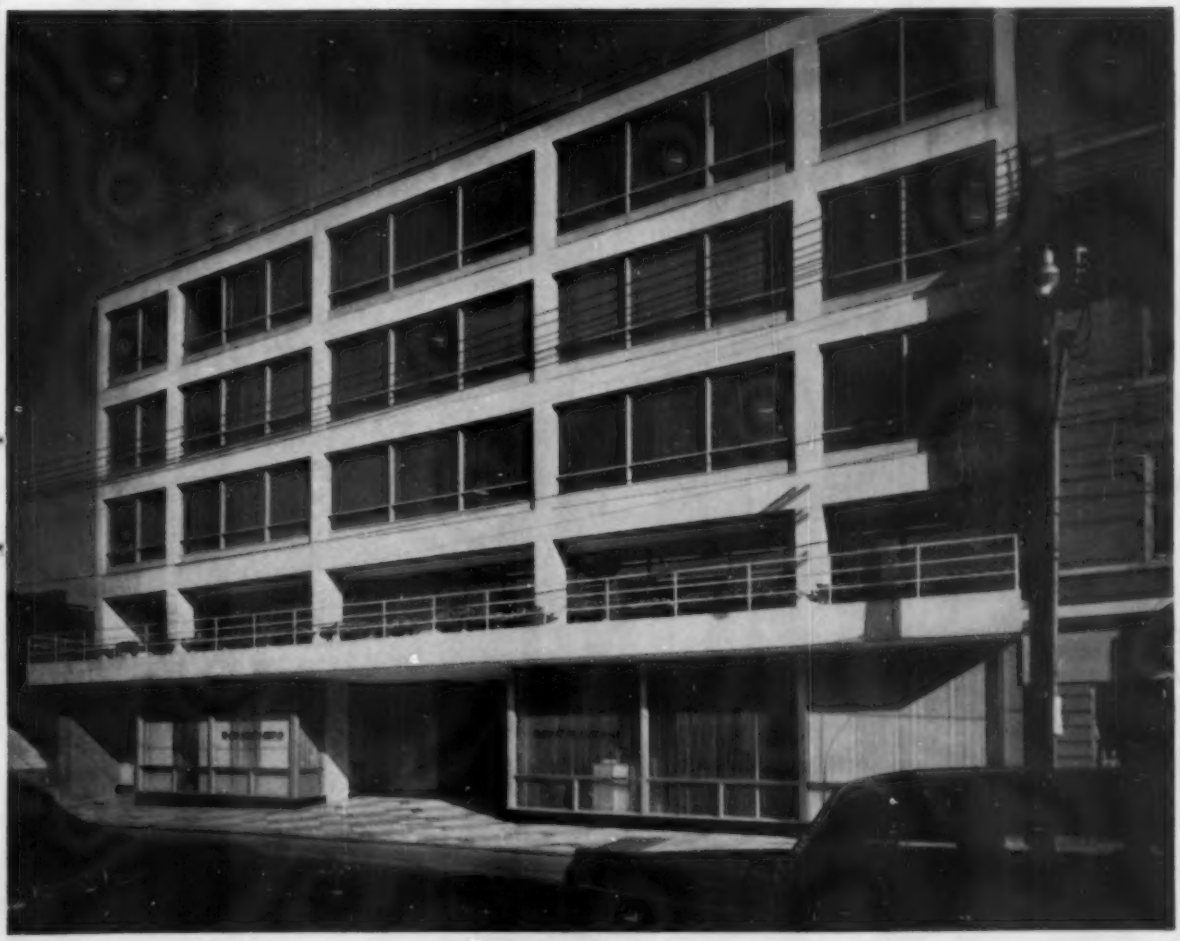
The garage was completely stripped—of all mechanical equipment, as well as the brick and steel sash filler walls. Then, portions of the ramp were removed, steel was used to frame the void, and stairs were introduced to connect the different levels of each floor *(see section)*. Since basic proportions were deemed good, the concrete frame, resurfaced with a restorative, noncapillary coating, was left exposed as an important element in the redesign. Spandrel areas were filled with pure-white porcelain-enamel panels, and all new equipment—elevators, toilets, heating and air conditioning, and plumbing and electrical work—was installed.

Though the structure was essentially sound, the frame of the 26-year-old garage was hardly refined in execution and the architect tells us "innumerable problems involving sagging and warped beams and girders were encountered." Since the average floor-to-floor height was only 11 feet, and air conditioning, recessed lighting, and a suspended acoustical ceiling all had to be provided, the work had to be done at close tolerances, and, consequently, "a very careful integration of the architectural, structural, and mechanical design was imperative."

Cost of the remodeling came to $7.24 per sq ft, and the building was 100 percent occupied within 60 days of completion. W. P. Wells was the Mechanical Engineer; John Bolen, Electrical Engineer; and the J. A. Jones Construction Company, General Contractor.



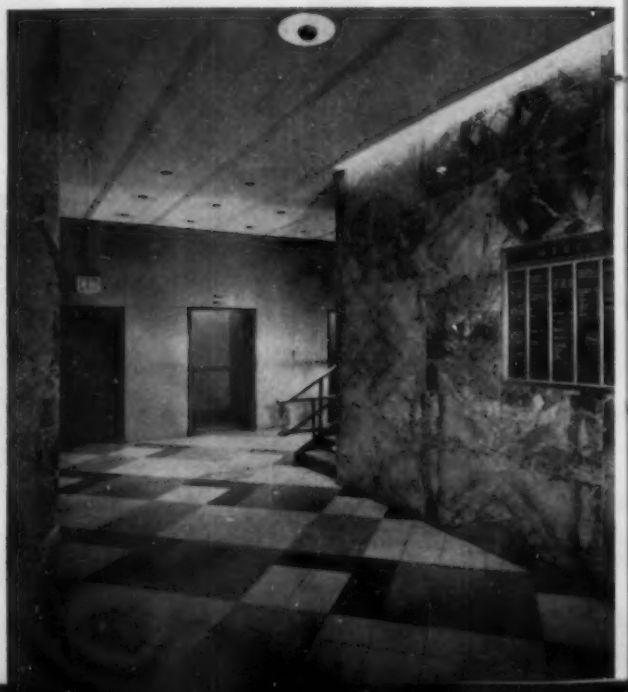




Intermediate projected sash were used for the windows, with green, heat-absorbing glazing. The storefront sections are aluminum. Photos: Joseph W. Molitor

remodeled office building

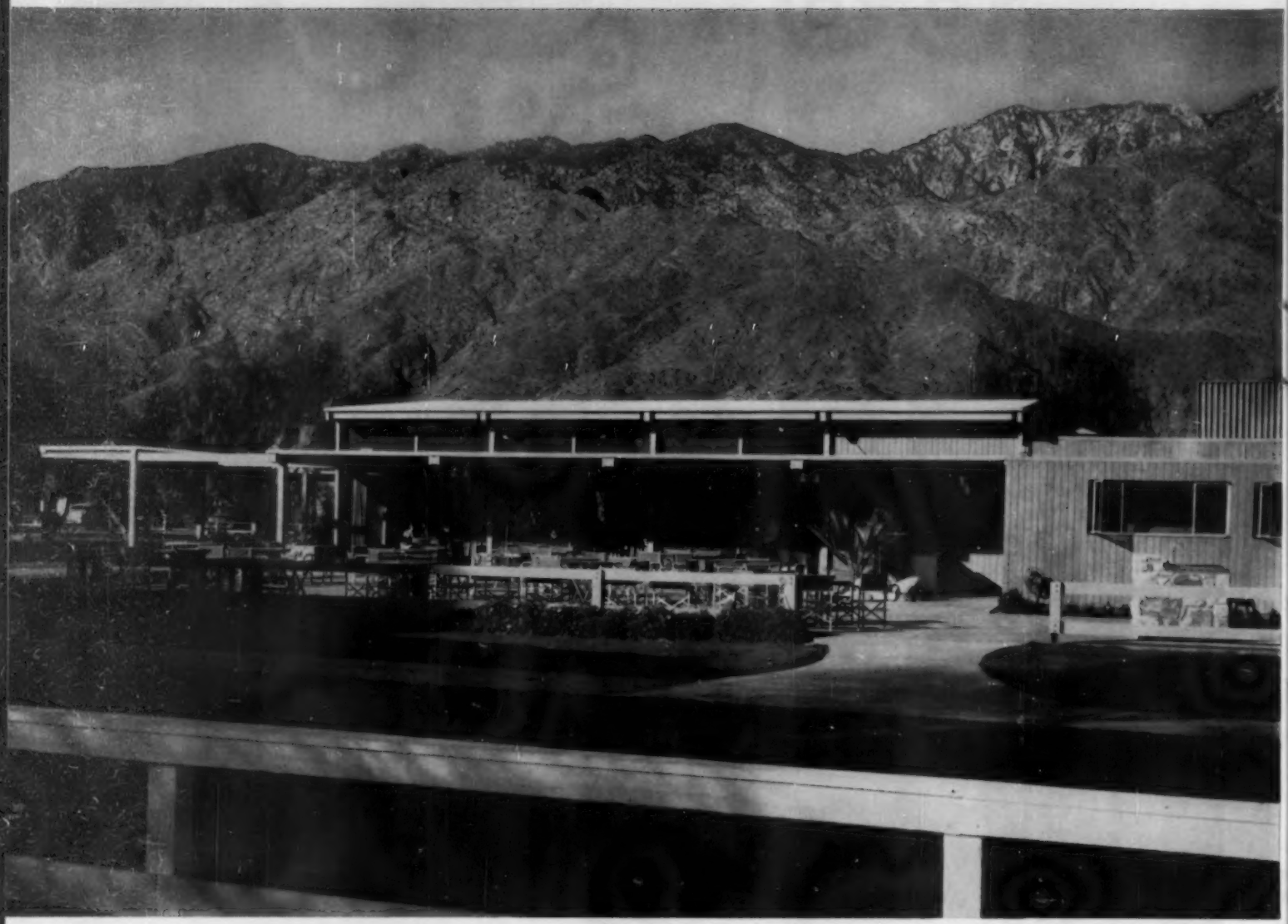
The sidewalk in front of the building (above), *as well as the floors of the entrance* (left) *and lobby* (below), *is of terrazzo, developed in a bold, geometric pattern. Lobby walls are finished with Italian marble.*



Where the ramp used to be, now there are flights of stairs (right) *joining the numerous levels within the building.*

Corridors on upper floors (below) *are well daylighted by partitioning fitted with full-height panels of obscure, corrugated glass.*

Typical rental space (bottom) *has recessed, fluorescent lighting, an acoustical-tile ceiling, and an asphalt-tile floor.*



restaurant

location | Palm Springs, California
architect | Daniel L. Dworsky

This informal dining and wining facility for the hotel at Deep Well Ranch replaces a building that was almost totally destroyed by fire. In fact, only the two big refrigerators for the kitchen could be salvaged. Since the property was one of the first ranches developed in the Palm Springs area, the site has a fine stand of old trees, quite apart from its glorious setting on the desert, at the foot of the San Jacinto Mountains.

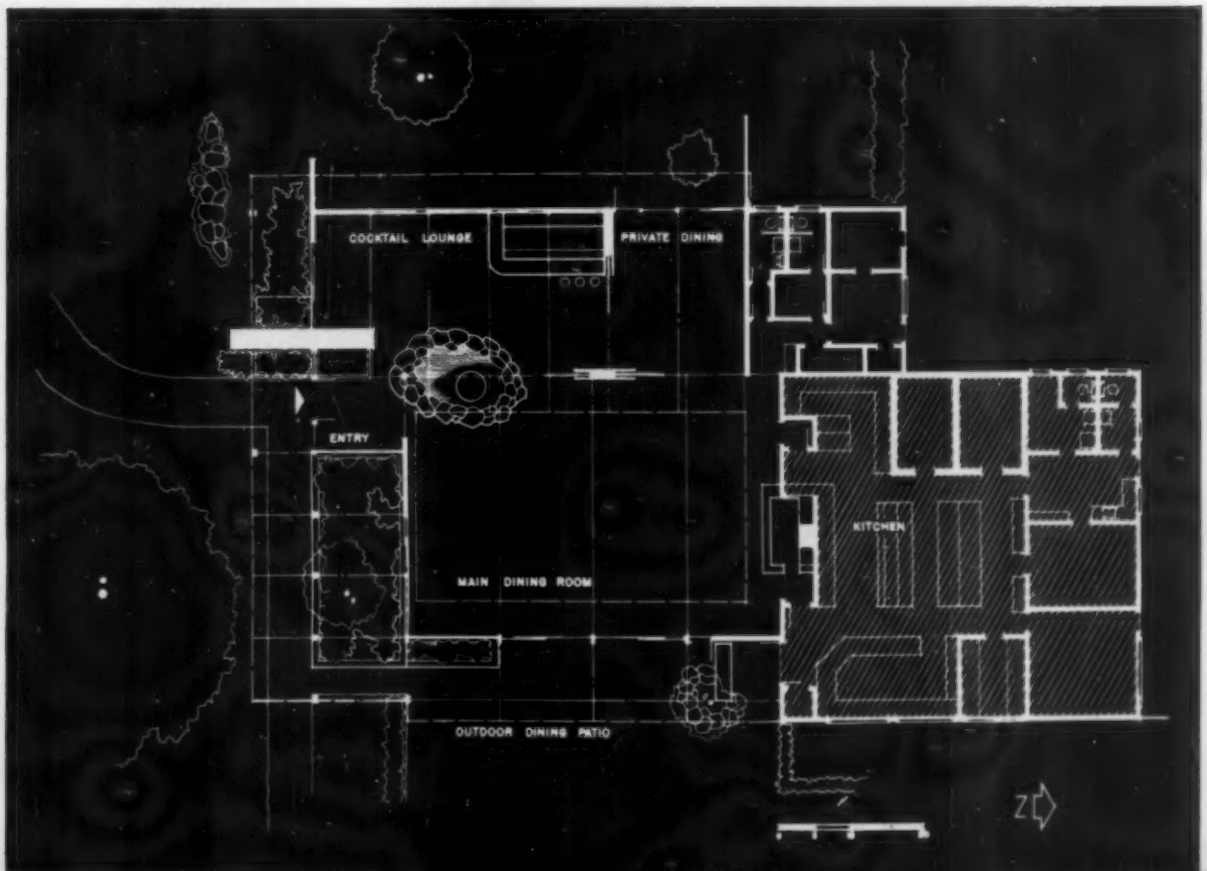
The wood-frame structure employs arched, laminated beams to span the main dining room; secondary areas are covered by flat, laminated roof decking supported on timber beams. The exterior trellis work and overhangs, the architect comments, "attempt a transition between the larger elements of the building and the landscape." The solid stone pier at the entrance was introduced "as a focal point in the composition."

Redwood is the exterior wall surface; interior walls are finished with Japanese ash. Flooring is asphalt tile over concrete, while the roofing is composition and rock with a white reflective cover. A gas-fired furnace supplies the forced-air heating system, and cooling is handled by evaporative units.

Reuben Alvy was the Structural Engineer; Driver & Eddy, the General Contractor.

A gnarled, old tree adjoins the main entrance on the south front (top).

Along the east side of the building (right) *is an inviting dining terrace.* Photos: Bill Hoffman



restaurant

One of the main features of the design is the suspended fireplace hood that serves as a partial divider between the bar lounge and dining room. The brazier stands in a pool of water, surrounded by desert boulders.

materials for gamma- and X-ray protection

by C. B. Braestrup*

Due to the present trend of expanding hospital X-ray facilities and the use of radiation of greater penetration, the cost of providing adequate radiation protection has been increased correspondingly. It is important, therefore, to consider what economies are possible through more effective shielding design. Thus, the choice of protection materials becomes particularly important.

The most common shielding material today is lead; it is very effective in attenuating radiation due to its high atomic number. It should be emphasized, however, that lighter materials, such as concrete, brick, or marble—if used in sufficient thickness—can provide the same degree of shielding as lead. In the past, too little consideration has been given to the shielding provided by these building materials; frequently, lead has been added to concrete floors or to brick walls where these already provided ample attenuation of the rays. In other instances, the need for lead could have been eliminated by a slight increase in the thickness of the concrete floor or by substituting solid for hollow concrete blocks in walls.

lead equivalent

The relative shielding of materials may be expressed in terms of their "lead equivalent"—by the lead equivalent is understood the thickness of lead which affords the same attenuation of the rays as the material in question, under specified conditions. The lead equivalent of a given material is not constant but varies with the energy of radiation. As a rule, the lead equivalent of building materials increases with the penetration of the rays *(Tables I and II)*.

* *Director, Physics Service, New York City Department of Hospitals.*

shielding materials

Lead. This metallic element has the advantage of providing protection with a minimum barrier weight and thickness; however, lead is not structurally self-supporting and must be mounted in such a manner that it is protected against mechanical damage and so that there will be no cold flow (sagging of metal due to its own weight). A common method is to sandwich the lead in between two cinder blocks with the lead extending about one in. on all four sides to provide adequate overlap. Such blocks are commercially available with the lead varying from 1.5 mm (1/16″) to 25 mm (1″) in thickness; also available is plywood or plasterboard to which lead has been glued and pressed under high pressure. The use of this material is particularly advantageous when lead has to be added to existing walls or for temporary construction where it is desirable to reuse the lead shielding. With either method, competent workmanship is essential in order to insure continuity of the lead shielding. Tests for radiation leakage can best be made after the completion of the building construction when the X-ray equipment has been installed and can be used for the radiation survey. Obviously, any correction of radiation leakage may be very expensive and cause inconvenience to the hospital. It usually requires pulling down finished walls and replacing the defective barriers. At present, lead is the most satisfactory shielding material for doors; however, the protection is frequently impaired by the installation of locks and other hardware in the field.

Concrete. Poured concrete barriers have two advantages: they can be made of any desired thickness and they serve also for structural purposes. Most concrete-shielding tables are based on a density of 2.35 g per cu cm (147 lb per cu ft); if actual density is less, barrier thickness must be increased proportionately. In any case it is good practice to provide a margin of safety to allow for possible variations in density. A frequent cause of inadequate concrete protection is the reduction of effective thickness of the barrier by recessed electric junction boxes or ducts. Flush-mounted junction boxes should be backed by sheet lead of a thickness equivalent to the thickness of the concrete replaced by the box; special lead baffles should be provided around ducts passing through concrete barriers; and, whenever possible, ducts and junction boxes should be located at least seven ft above the floor.

Often it is more economical to use solid concrete blocks rather than poured concrete; however, if such walls are exposed to the primary beam, the barriers should be made up of several withes of concrete blocks with staggered horizontal and vertical joints. The shielding properties of concrete may be improved by using a heavy aggregate such as iron ore or barite. Care must be taken to insure homogeneity of the barrier; furthermore, dependable shielding data, based on actual measurements of loaded concrete, often are not available for the radiation penetration of interest.

Marble. Considerable attention has been given recently to the use of marble for protection purposes; erroneously, the impression has been created that it possesses some unique shielding property. Measurements made by Brucer[1] at Oak Ridge Institute of Nuclear Studies indicate that marble provides essentially the same degree of protection against super-

[1] *Marshall Brucer.* Marble Used as a Radiation Shield. *speech delivered March 2, 1954 and published by Marble Institute of America.*

voltage radiation as concrete, after correction has been made for the difference in density. Since the density of marble is about 15 percent greater than concrete, the thickness of marble barriers can be 15 percent less than that of concrete barriers for supervoltage installations. Measurements made in this laboratory show that for low-energy radiation, as used in radiography, the required thickness of marble barriers is approximately 30 percent less than that of concrete, resulting in about 15 percent reduction in barrier weight.

The density of marble is nearly constant, assuring uniform protection; therefore, no allowance has to be made for the possibility of density variations as in the case of concrete. However, joints should be staggered to avoid leakage. The principal advantages of marble are architectural in that it requires no plastering and provides a permanent smooth-finished surface. For heavy barriers, marble is considerably more expensive than concrete.

other masonry construction

Brick and solid cinder or gypsum blocks may be used in place of concrete blocks provided the thickness of the barrier is increased so that its weight per sq ft is equal to that shown under concrete. *(Tables I and II)*. If hollow cinder blocks are filled on the job, special care must be taken to avoid any air spaces.

Frequently, extensions are added to present buildings to provide more space for the radiological service. As a result, former outside walls may become inside partitions of X-ray rooms and the shielding offered by such walls may be utilized to advantage. If lead has to be added it should be preferably on the "protected" side of the wall where it will be most effective.

fluoroscopic rooms

The walls of fluoroscopic rooms are exposed to scattered and leakage radiation only; therefore, ordinary three-in. hollow cinder-block partitions, plastered on both sides, will provide ample protection, if the total minimum effective thickness of solid material is equal to that indicated under concrete *(Table II)*. The average thickness of the solid material is greater, which compensates for the lower density

TABLE I: AVERAGE COBALT 60 PROTECTION* / Minimum distance from Cobalt 60 to occupied area

Curies approx.	r/week at 1 m	Type of barrier	7 ft						10 ft						14 ft					
			Lead			Marble Concrete			Lead			Marble Concrete			Lead			Marble Concrete		
			cm	in.	psf	in.	psf	in.	cm	in.	psf	in.	psf	in.	cm	in.	psf	in.	psf	in.
500	20,000	Floor	18.0	7.1	420		435	35.5	16.6	6.6	387		404	33.0	15.5	6.1	362		373	30.5
		Ceiling	13.0	5.1	303		312	25.5	11.8	4.6	275		282	23.0	10.6	4.1	247		251	20.5
		Walls	15.4	6.1	359	25.9	373	30.5	14.2	5.6	331	23.8	343	28.0	13.0	5.1	303	21.7	312	25.5
1000	40,000	Floor	19.2	7.6	448		465	38.0	18.0	7.1	420		435	35.5	16.6	6.6	387		404	33.0
		Ceiling	14.2	5.6	331		343	28.0	13.0	5.1	303		312	25.5	11.8	4.6	275		282	23.0
		Walls	16.6	6.6	387	28.1	404	33.0	15.4	6.1	359	25.9	373	30.5	14.2	5.6	331	23.8	343	28.0
2000	80,000	Floor	20.5	8.1	478		496	40.5	19.2	7.6	448		465	38.0	18.0	7.1	420		435	35.5
		Ceiling	15.4	6.1	359		373	30.5	14.2	5.6	331		343	28.0	13.0	5.1	303		312	25.5
		Walls	18.0	7.1	420	30.3	435	35.5	16.6	6.6	387	28.1	404	33.0	15.4	6.1	359	25.9	373	30.5

*To be used only as a guide in selecting shielding materials in the preliminary planning stage; actual protection requirements vary considerably according to beam orientation, angle of incidence, work load, and degree of occupancy of nearby areas.
The shielding requirements for secondary barriers vary widely with angle of scattering and type of equipment and are not included in table.

TABLE II: AVERAGE X-RAY SHIELDING REQUIREMENTS[a] / Minimum distance from X-ray tube to occupied area

Type of room	Kilovoltage	Maximum ma-min per week[b]	Type of barrier[c]	5 ft						7 ft						10 ft						14 ft					
				Lead			Marble		Concrete			Lead			Marble		Concrete			Lead			Marble		Concrete			Lead			Marble		Concrete	
				mm	in.	psf	in.	psf	in.	psf	mm	in.	psf	in.	psf	in.	psf	mm	in.	psf	in.	psf	in.	psf	mm	in.	psf	in.	psf	in.	psf
Fluoroscopy	100 or 125	8000 or 4000	Secondary walls	0.7		1.6	2.0	28	2.8	34	0.5		1.2	1.4	20	1.9	23	0.3		0.7	0.6	8	0.9	11	0.1		0.2	0.4	1	0.6	7
Radiography	100 or 125	1000 or 400	Floor	1.5	1/16	3.5			5.0	61	1.3	1/16	3.0			4.3	53	1.1	1/32	2.6			3.5	43	0.9	1/32	2.1			2.9	35
			Ceiling	0.7		1.6			2.2	27	0.5+		1.2			1.6	20	0.4		0.9			1.1	13	0.2		0.5			0.8	10
			Walls	1.1	1/32	2.6	2.5	35	3.5	43	0.9	1/32	2.1	2.1	30	2.9	35	0.7		1.6	1.6	23	2.2	27	0.5		1.2	1.2	17	1.7	21
			Secondary barrier	0.3		0.7	0.6	8	0.8	10	0																				
Superficial therapy	125	4000	Floor	2.4	3/32	5.6			7.6	93	2.1	3/32	4.9			6.9	84	1.9	1/16	4.4			6.1	75	1.7	1/16	4.0			5.3	65
			Ceiling	1.4	1/16	3.3			4.7	58	1.2	1/16	2.8			4.0	49	1.0	1/32	2.3			3.2	39	0.8	1/32	1.9			2.4	29
			Walls	1.8	1/16	4.2	4.4	62	6.1	75	1.6	1/16	3.7	3.9	55	5.4	66	1.4	1/16	3.3	3.3	46	4.6	56	1.2	1/16	2.8	2.7	38	3.8	47
			Secondary barrier	1.1+	1/32	2.6	2.5	35	3.5	43	0.9	1/32	2.1	2.1	30	2.9	35	0.7		1.6	1.6	23	2.2	27	0.5		1.2	1.1	15	1.5	18
Deep therapy	200	40,000	Floor	5.7	7/32	13.3			15.4	189	5.2+	7/32	12.1			14.3	175	4.8	3/16	11.2			13.0	159	4.2	3/32	9.8			12.2	149
			Ceiling	3.8	3/32	3.9			11.2	137	3.3+	1/8	7.7			10.0	122	2.9	1/8	6.8			9.1	111	2.5	3/32	5.8			8.0	98
			Walls	4.8	3/16	11.2	10.1	142	13.0	159	4.3	5/32	10.0	9.4	132	12.1	148	3.8	5/32	8.9	8.7	122	11.2	137	3.3	1/8	7.7	8.0	113	10.2	125
			Secondary barrier	3.4	1/8	7.9	6.3	89	8.1	99	2.9	1/8	6.8	5.5	77	7.1	87	2.4	3/32	5.6	4.7	66	6.0	73	1.9	1/16	4.4	4.0	56	5.1	62
Deep therapy	250	40,000	Floor	10.0	13/32	23.3			17.4	213	9.2	3/8	21.4			16.3	200	8.4	11/32	19.6			15.2	185	7.6	5/16	17.7			14.0	171
			Ceiling	6.8	9/32	15.7			12.9	158	6.0	1/4	14.0			11.8	144	5.3	7/32	12.3			10.6	130	4.5	3/16	10.5			9.5	116
			Walls	8.5	11/32	19.8	12.9	182	15.2	186	7.6	5/16	17.7	12.0	159	14.1	173	6.8	9/32	15.8	11.0	155	12.9	158	6.0	1/4	14.0	10.0	141	11.8	144
			Secondary barrier	5.4	7/32	12.6	8.2	115	9.6	118	4.6	3/16	10.7	7.2	101	8.5	104	3.8	5/32	8.9	6.3	89	7.4	91	3.0	1/8	7.0	5.4	76	6.3	77

[a] To be used only as a guide in selecting shielding materials in the preliminary planning stage; actual protection requirements vary considerably according to X-ray beam orientation, angle of incidence, work load, and degree of occupancy of nearby areas.
[b] Represent average work load.
[c] Secondary barriers refer to those not exposed to the primary beam; the following use factors have been assumed for the primary barriers: floor 1, walls ¼, and ceiling ½.

of cinder and plaster compared with concrete. The floors and ceiling usually do not require special shielding as the vertical scattering is minimal. Since fluoroscopic rooms often are converted to radiography later, this possibility should be considered in planning protection.

radiographic rooms

There has been a tendency to use 1.5-mm (1/16″) lead for radiographic rooms irrespective of actual requirements. This corresponds to about five in. of concrete and for such thicknesses concrete is usually not so advantageous as lead due to the greater weight and space requirements. However, in the newly revised X-ray protection code, National Bureau of Standards Handbook No. 41 (revised), greater consideration is given to the type of radiation that the barrier is exposed to, the actual use of the equipment, and the degree of occupancy of adjacent areas. As a result, some of the radiographic walls may require only 0.5-mm lead shielding or the equivalent. For such walls, solid concrete, cinder blocks, or marble may prove more economical than lead, since there is only a minor saving in reducing the lead thickness much below 1.5 mm. It is generally advantageous to use concrete floors of sufficient thickness to eliminate the need for lead, which may cost more than $100 a room, exclusive of labor.

therapy rooms

In the 200-275 kv range lead generally provides the most economical shielding for walls and that part of the floor which is exposed to the primary beam; for the rest of the floor area and for the ceiling, concrete alone may be used to advantage provided the supporting structure can carry the weight.

For supervoltage X-ray therapy installations, concrete shielding is used extensively because the cost of lead barriers several inches thick would be prohibitive. Where lead is used, it is generally employed to supplement concrete shielding in order to reduce weight and space. The use of heavy motor-operated lead or steel doors may be avoided by a maze arrangement whereby the door is exposed only to radiation that has been scattered at least twice. The maze doors require only about three-mm lead shielding.

There is at present a trend toward the use of Cobalt-60 gamma radiation in place of supervoltage X-rays. Cobalt-60 teletherapy equipment requires less space and no heavy electric wiring; however, the shielding requirements are almost identical for both types of high-energy sources. Often Cobalt-60 equipment is installed in rooms planned or formerly used for 250-kv X-ray therapy. In such cases it may be necessary to use lead rather than concrete for the supplementary shielding in order to avoid excessive barrier weight.

general considerations

Within the last few years several states have enacted radiation-protection laws. In general, these regulations conform fairly closely with the recommendations of the National Committee on Radiation Protection; however, in some cases the state laws are much more restrictive. It is essential to take this into account in shielding design.

Frequently, too little consideration is given to protection of persons not occupationally exposed, such as occupants of residences, working areas, and playgrounds near radiological departments. Some of the newer codes limit the maximum permissible dose for such persons to 1/10 of that for those occupationally exposed. As a result it may be necessary in some cases to shield outside walls, particularly windows, even though the distance to the occupied areas is several hundred feet.

Visual inspection of shielding is insufficient to insure that there is adequate protection; therefore, state regulations usually require that a radiation survey be made of the completed installation by a qualified expert. His certificate indicating that the protection complies with national and local codes should be part of the shielding specifications.

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X-ray Protection, National Bureau of Standards, Handbook 41 (revised).

high-strength bolts

Two-man bolting crew uses only pneumatic impact wrench and holding wrench to install high-strength steel bolts (above top). *Impact wrench is preset to idle when required torque range is attained. Special scaffolding was unnecessary as bolters need not shift positions frequently.*

Ironworker uses indicating torque to check a column splice.

Framework for New York's first building to be erected with high-strength bolts has just been completed. Although the current shortage of riveting crews in the locality was a major factor in the decision to use bolts on this structure, joints fabricated with high-strength bolts provide structural as well as economic benefits. Because men unfamiliar to bolting techniques can be quickly trained to operate impact and torque wrenches, the structural assembly for this 18-story building was completed in less than three months. This time interval is said to be several weeks faster than the time required for conventional construction.

Bolts were used in all holes, obviating the necessity of erection bolts to hold structural members in place prior to riveting. A carburized washer was installed under both head and nut to allow for generation of the high torque required without scoring the connected material. Shear strength of a fabricated joint depends on the amount of clamping effect that can be produced by the internal tension within the fasteners. The frictional resistance between plates of a high-strength bolt joint is nearly twice as great as that developed by the clamping effect resulting from the cooling of a steel rivet. The bolt itself is not subject to fatigue and will not be stressed in shear. A fluctuating external load on the joint will not create appreciable effect on the initial bolt load. Other advantages claimed for the use of high-strength bolts are: (1) shortened erection schedules with less manpower; (2) assembly performed by iron workers with little training; (3) greater safety for workmen; (4) less equipment required; and (5) less noise.

Sylvan Bien and Robert L. Bien were the Architects; Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, New York, supplied the high-strength bolts.

assembly plant

location | Wayne, Michigan

associated engineers-architects | Giffels & Vallet, Inc., L. Rossetti

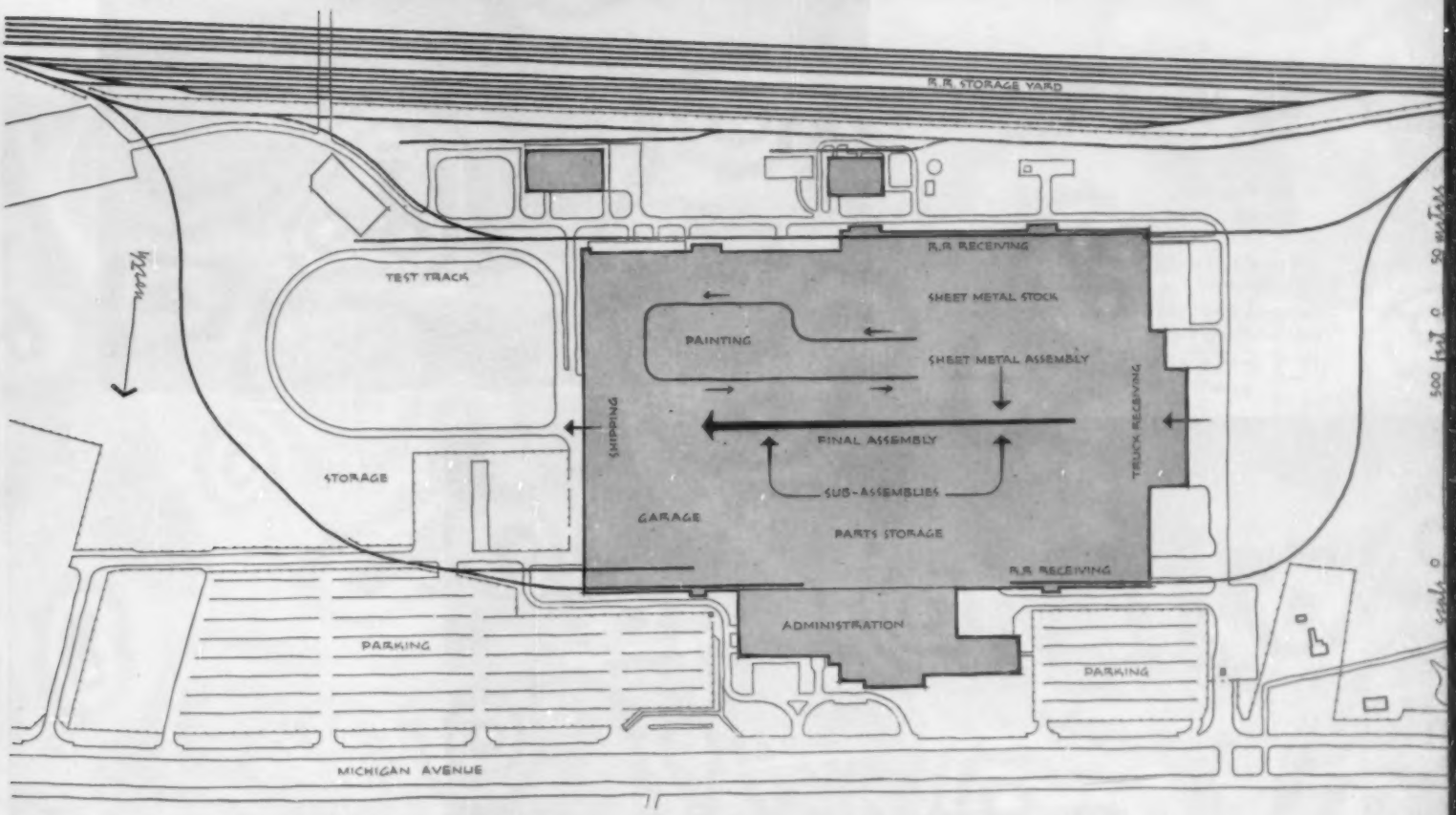
The major problem involved in the design of this vast assembly plant for the Mercury Division of Ford Motor Company was to organize the complex—assembly building, auxiliary buildings, and other facilities—on the site for maximum efficiency of operation, best traffic flow, parking, etc. While the site is relatively flat and generally favorable, it is exceptionally long and narrow; hence, the extended horizontal aspect of the scheme.

In general, as the plot plan shows, production moves in a west-to-east direction, with rail sidings entering the plant along both the north and south walls, and the dock for truck deliveries at the western end. The administration-office unit *(above)* is about at the center of the north face of the building.

Speed of construction was an important factor, and for the plant area the architects-engineers selected a wall system consisting of precast concrete panels, up to the sills of the steel sash, with insulated aluminum panels above the sash *(acrosspage)*. Steel columns and trusses form the structural system, which is organized in 40′ x 50′ bays. The roof is an insulated steel deck. Sway frames are lined up with panel points, and the truss web members are so designed as to permit running of ducts and piping through the truss without interference. Floors are either concrete with metallic hardener or with wood-block surface. Artificial lighting throughout is supplied by fluorescent fixtures.

The ventilating and heating ducts, lighting and power distribution, and the sprinkler system are designed as parts of an integrated, noninterfering system, all run above the bottom chord of the trusses. Heating and ventilating systems supply the plant with filtered, blended fresh and return air.

The General Contractor for the plant was Bryant & Detwiler.

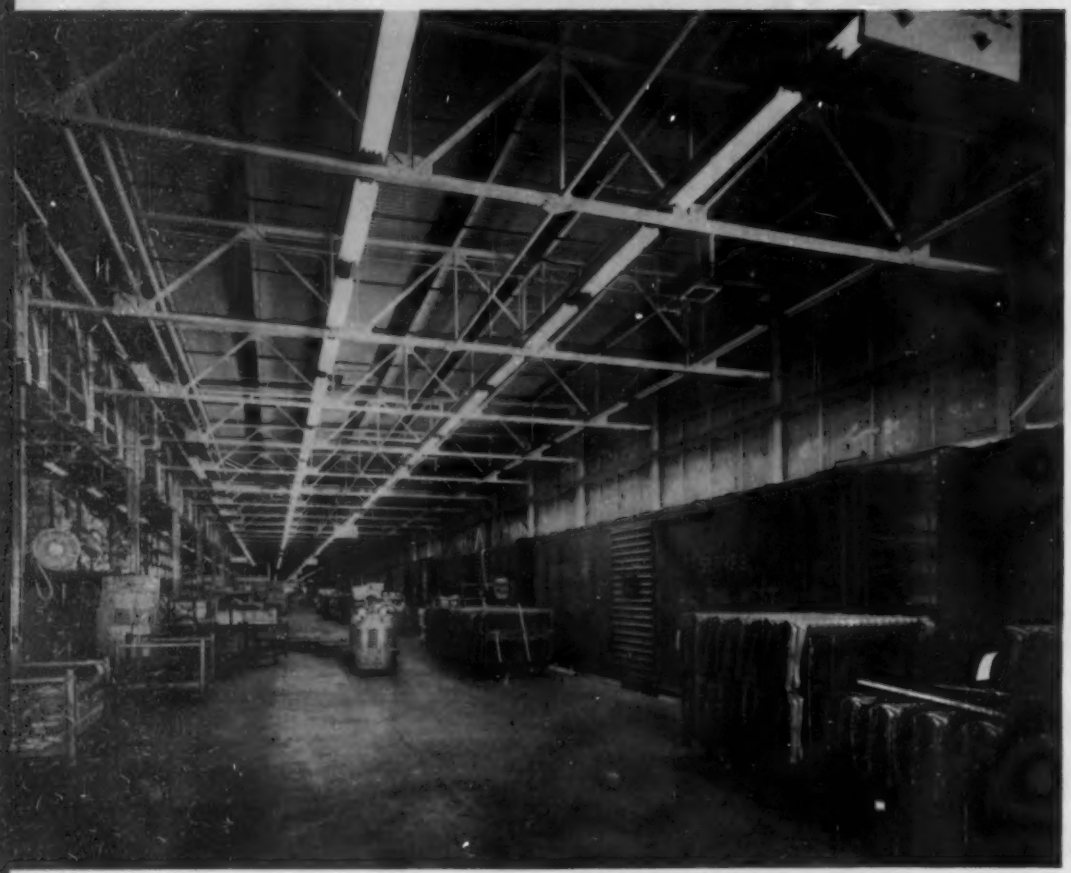

R.R. STORAGE YARD
R.R. RECEIVING
SHEET METAL STOCK
PAINTING
SHEET METAL ASSEMBLY
TEST TRACK
SHIPPING
FINAL ASSEMBLY
TRUCK RECEIVING
STORAGE
SUB-ASSEMBLIES
GARAGE
PARTS STORAGE
R.R. RECEIVING
ADMINISTRATION
PARKING
PARKING
MICHIGAN AVENUE

assembly plant

At the west end of the plant (right), *both rail sidings and truck dock (far right of photo) serve the manufacturing area.*

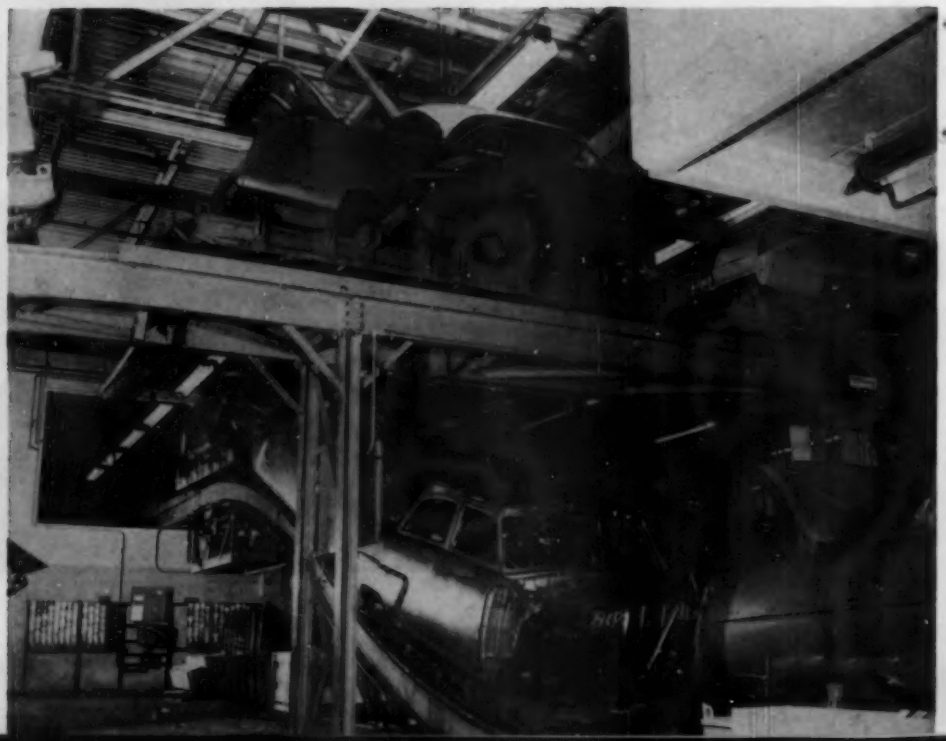
The rail sidings actually enter the plant (below) *providing complete protection for delivery of parts and subassemblies to the adjacent assembly lines.*

Photos (except as noted): Hube Henry, Hedrich-Blessing
Photo at right: Lens-Art



In the paint area (right) *unpainted car bodies travel on the lower conveyor, while the painted bodies head for the final assembly line along the upper, cross-over conveyor.*

Photo: Mercury Division



General office spaces (above) *are light, airy, and uninterrupted by columns. Acoustical tile is used on the ceiling.*

Eating facilities include a large cafeteria for personnel who work on an hourly basis; a smaller cafeteria for salaried personnel; and a club-like private dining room (right).

reinforced-brick masonry design

Certainly every architect knows that reinforced-brick masonry (RBM) is brick construction in which steel reinforcement can be so placed that the masonry will have increased resistance to the forces of wind, earthquake, bomb blast, or similar catastrophic disturbances. For a system of construction that has been with us more than 30 years, however, RBM is probably the least known building method to resist lateral forces. If a recent survey of the design profession can be considered indicative, there is a recognized need for technical information on this subject so that designers will be allowed more latitude in their choice of building materials when called upon to design for lateral forces.

applications and cost

RBM is most commonly used for walls, columns, lintels, beams, and foundations. Yet it is also practical for floor slabs, balconies, stairs, and piers. In smaller members, such as relatively short lintels, small-diameter reinforcing rods can be placed directly in the horizontal mortar joints. Where heavier steel is required, the steel is placed in a cavity—but not in contact with the brick—and the cavity is filled with a grout which bonds both steel and brick into a solid, homogeneous mass. Although sometimes used, special shapes or sizes of brick are not required. Among the advantages of RBM are: elimination of expensive form lumber, an opportunity to match the appearance of adjacent existing masonry structures, faster construction time, and, in many cases, lower construction costs. Building code requirements for minimum reinforcement generally provide 2½ times more steel for concrete than for reinforced-brick masonry. Walls of minimum thickness and light structural members, therefore, can be constructed at substantially lower costs with RBM than with reinforced concrete. Heavily reinforced brick masonry walls ordinarily will cost about the same as equally reinforced concrete walls.

Costs of RBM, as in other types of construction, vary materially in different regions, depending on supply and productivity of labor, on-site cost of materials, and the construction market. Estimates obtained from experienced Los Angeles contractors in 1951 indicate the relative costs per sq ft of wall area of RBM and reinforced-concrete walls *(Table 1)*.

The nearest thing to a comparison of costs between RBM and common unreinforced masonry was illustrated in the winning bids submitted for two nearly identical hospitals in 1953. The winning bid for construction of the RBM design was less than three percent higher than that submitted for the other. Further, site conditions at the unreinforced structure led to additional foundation expenses as well as variations in labor costs and equipment installations which should be considered in comparing the two bids.

A new use for RBM was found last summer in the South, where swimming pools for motels, hotels, and private homes were built with reinforced brick at substantial savings. In North Carolina a pool 23′ x 50′ and 10′ deep at its maximum depth was built, complete with filtration plant, for $3650.

design standards

Proper design for lateral force in RBM requires three major considerations: (1) accurate knowledge of the materials and their properties, both singly and in combination; (2) understanding of the nature and anticipated magnitude of the various lateral forces which the building is designed to withstand; and (3) proper consideration of lateral-force resistance as a part of the architectural treatment of the building, so that neither the utility of the structure nor its resistance requirements is unduly affected by the other. This could affect the size and shape of windows, the frequency of their occurrence in walls, and the actual shape and placement of the building on its site.

It is recognized that there is wide variation in lateral forces. A building need not be heavily reinforced to resist most wind loads, for instance, but may require much more reinforcement to resist earthquake or bomb blast. Once these forces are known and evaluated, lateral stresses to resist them can be determined, and translated into structural recommendations. RBM technology has advanced to the point where many short cuts to suitable recommendations for reinforcing strengths can be used, by the use of formulas that are generally accepted in many codes.

Lateral forces, which structures should be designed to resist, are prescribed in building codes and standards developed by such organizations as the American Standards Association. The prescribed requirements are based on laboratory tests, the performance of structures that have been subjected to the lateral force in question, and the engineering judgments of those who participated in the development of the requirements.

The American Standard Building Code Requirements for Minimum Design Loads in Buildings and Other Structures, A58.1-45, is used extensively as a basis for design to resist wind loads. This standard lists design wind pressures for various heights of buildings—ranging from 20 psf for buildings less than 50 ft in height to 40 psf for 1600 ft and over in height.

Design criteria for buildings required to resist earthquakes are not so well established as those for wind resistance, due in part to the difficulty of predicting the behavior of structures under actual earthquake motion and also to the relatively infrequent occurrences of destructive shocks which permit a study of structures subjected to them.

A recommended earthquake lateral-force code has been proposed by a joint committee of the American Society of Civil Engineers and the Structural Engineers of Northern California which is published in ASCE Transactions, Vol. 117, 1952. This code takes into consid-

* *Director, Engineering and Technology, Structural Clay Products Institute, Washington, D. C.*

by Harry C. Plummer*

eration the dynamic properties of the structure, as well as its mass, in determining equivalent static forces, and probably provides the most modern earthquake-design requirements available at the present time.

Design requirements to resist bomb blast are currently in a formative stage and must, of necessity, be based upon many assumptions which may or may not be realized, such as the intensity of the blast, the distance of the structure from ground zero, and many others.

In its Technical Bulletin, TB 5-1, April 1954, the Federal Civil Defense Administration presents "Interim Design Standards for Protective Construction in Industrial Structures." The minimum design requirements set forth in this bulletin probably are as of this date the best information available to designers.

After the design lateral forces have been determined, the design of reinforced-brick masonry structural members is based on the same principles of mechanics as the design of structural steel or reinforced concrete.

Tests indicate that the structrual performance of reinforced-brick masonry is analogous to that of reinforced concrete and that the formulas used in the calculation of stresses and deflections in reinforced-concrete flexural members can be used in calculations for similar reinforced-brick members. Also, both types of construction perform like homogeneous materials in that all relations of load and moment to deflection and stress are linear over ranges of loading well past design loads.

Formulas for the design of reinforced-brick masonry flexural members are the same as those used for similar reinforced-concrete members and the formula for the permissible load on reinforced-brick columns is a modification of the reinforced-concrete column formula:

$$P = A_s(0.20\, f'_m + 0.65\, p_s f_s)$$

Allowable stresses in reinforced-brick masonry are based upon extensive tests of full-size reinforced-brick members, as well as the performance of structures which have been subjected to wind and earthquake forces.

Recommended allowable stresses are given *(Table II)* in which f'_m is the ultimate compressive strength of masonry prisms at the age of 28 days.

Most construction observers see the beginnings of a trend toward lateral-force design resulting from the increasing frequency of windstorms, tornadoes, and hurricanes in the east and midwest. For another thing, the possibility of earthquakes in sections of the U. S. not ordinarily thought of as vulnerable, although they are included in Zone 3 areas on geological maps, has been discussed widely of late. Only a few months ago the Pacific Coast Building Officials Conference took a long look at building codes in the Pacific Northwest, and considered tightening its lateral-force provisions.

Then, too, industrial management may influence designers toward protective construction, especially for additions to plants located in critical target areas. The cost of protective construction is eligible for 100-percent rapid amortization. According to the Office of Defense Mobilization, protective construction (meaning lateral-force design to resist strong forces from bomb blast) "can reduce the area of major damage by one-third." Since costs for this kind of protection are at the most 20 percent higher than for ordinary construction, the potential advantages of lateral-force design cannot be ignored.

From an architectural standpoint, however, RBM seems to offer the designer greater flexibility in treatment and use of materials than any other comparable system. There is no limitation in selection of masonry materials, of brick patterns, bonds, colors, or effects, from that offered in unreinforced masonry. It is almost a mystery why so little is known about it. Perhaps it is time the cloak of mysticism and obscurity is withdrawn, and a valuable construction system comes into its own.

TABLE I

		8-in. walls	12-in. walls
Contractor A	RBM	1.28	1.68
	Concrete	1.65	1.90
Contractor B	RBM	1.53	2.15
	Concrete	1.85	2.15

Note: these estimates are for walls with minimum reinforcement as required in the Uniform Code of the Pacific Coast Building Officials Conference. Contractor A's prices include labor and materials, but no equipment, overhead, or profit. Contractor B's prices include labor, materials, scaffolding, and equipment items, but no profit.

TABLE II: Allowable Stresses in Reinforced-Brick Masonry

	Stress	Allowable stress psi for any strength of f'_m*	
f_m	Compression-axial	0.20 f'_m	
f_m	Compression-flexural	0.33 f'_m	
v_m	Shear—no web reinforcement	50 psi	
v	Shear—with web reinforcement	150 psi	
f_m	Bearing	0.25 f'_m	
E_m	Modulus of elasticity	1000 f'_m	
E_r	Modulus of rigidity in shear	400 f'_m	
	Bond	Mortar or grout	
		A-1 psi	A-2 psi
u	Plain bars	80	60
u	Deformed bars (ASTM A305-)	160	120

* The ultimate compressive strength of masonry prisms at 28 days.

fire-alarm systems, part 2

Part 1 of this article appeared in the August issue of P/A.

audible signaling appliances (article 250)

2510. Evacuation Systems.
2511. *Fire Alarm Systems provided for evacuation of occupants of factories, workshops, institutions and similar premises shall have one or more audible signaling appliances approved for the purpose on each floor of the building, so located that their operation will be heard clearly regardless of the maximum noise level obtained from machinery or other equipment under normal conditions of occupancy. Each section of a floor divided by a fire wall may be considered as a separate floor for the purpose of this protection.*
2520. Distinctive Signals.
2521. *Audible Signal appliances of a fire alarm system shall produce signals which are distinctive from other similar appliances used for other purposes in the same area. Different types of fire-protective audible signaling appliances in the same area are not recommended.*

It is well to consult a manufacturer of fire-alarm equipment in the selection of the proper types and sizes of audible signals to be specified. He can also advise where they are to be located on the electrical plans to assure proper coverage.

signaling capacity of circuits (article 260)

2611. *The number of alarm signal transmitting devices connected to one signaling circuit shall be limited to avoid interference between signals during the peak conditions of normal traffic.*

For the types of installations and systems being considered here, interference between transmitters is seldom a problem and does not warrant using other than transmitting devices (such as fire-alarm boxes) having what is known as a local noninterfering feature. This merely means that the lever of the alarm box is designed to trip free of the box mechanism or lock in place, once it has been pulled and released, thereby preventing interference with the alarm due to further manipulation of the pull lever. This feature is standard for the boxes supplied by the fire-alarm manufacturers of the specific local systems described in this article. For example: In an institution when a coded fire-alarm system is installed, the signals are heard throughout the building and the chance of anyone pulling a box while the bells are sounding (from the first box pulled) are extremely remote. Furthermore, it usually takes only about 30 to 40 sec for a box to complete its four rounds of code which makes simultaneous operation of boxes unlikely. Where it is considered that interference may be a problem due to the extent of the system and the number of transmitters on a signaling circuit, shunt noninterfering boxes may be specified. These boxes are so arranged that the box electrically nearest the fire-alarm control panel will shunt out any other box that is farther away from the panel in the event two or more are pulled at the same time. The feature merely requires an additional contact in the box and usually an extra wire in its circuit wiring. Boxes are available that have a positive noninterfering feature wherein the first box pulled takes complete control of the fire-alarm circuit. Subsequently operated stations cannot interfere with its signal or send their signal over the circuit until such time as the first box has completed its number of rounds of signals, if at all. This means that the boxes are equipped with noninterference magnets, contacts, mechanical devices, etc., which makes them considerably more expensive than boxes without this feature. This feature can usually only be justified for Central Station or Municipal-Type Fire-Alarm Systems which are not within the scope of this article.

2620. Separate Alarm Signal Circuits.
2621. *It is recommended that alarm signal transmitting devices be connected to signaling circuits reserved solely for alarm signals.*
2630. Combined Alarm and Supervisory Signal Circuits.
2631. *When both sprinkler supervisory signals and fire or water-flow alarm signals are transmitted over the same signaling circuit, provision shall be made to either obtain alarm signal precedence or sufficient repetition of the alarm signal to prevent the loss of any alarm signal transmitting devices.*
2640. Combined Alarm Signal Circuits.
2641. *When signals from manual fire alarm boxes and other alarm signaling devices are transmitted over the same signaling circuit, there shall be no interference with the fire box signals when both types of signaling devices are operated at the same time. Provision of the shunt non-interfering method of operation is acceptable for this performance.*

Some installations will have certain areas such as storage rooms protected by sprinklers or thermostats and all other areas protected by manual fire-alarm boxes. For such installations, the water-flow alarm signals or thermostats are connected to the same fire-alarm control panel as is used for the manual fire-alarm system. Where coded systems are used, as will be described later, provisions are then made on the fire-alarm control panel to sound a distinctive code or codes for the water-flow alarm or thermostats over the same audible signals as is used for the manual fire-alarm system. The codes, therefore, identify the location of the fire regardless of what type of transmitting device has been operated.

2650. Number of Buildings per Circuit.
2651. *One signaling circuit shall serve not more than twenty-five buildings, except that this number may be increased to one hundred if they are of common ownership and occupied by the owner and are used for other than manufacturing purposes, if an alarm signal cannot be received from more than one transmitting device at a time, and if the total number of sets of coded signaling contacts (one set for each code wheel of a device) in the circuit does not exceed 250.*
2660. Number of Interfering Type Signaling Devices per Circuit.

by L. T. Chandler*

2661. *One signaling circuit shall serve not more than fifty signal transmitting devices.*

2670. Number of Non-Interfering Signal Type Transmitting Devices per Circuit.

2671. *In a building in which either the signaling devices or circuits or both are so designed that signals cannot be transmitted simultaneously for more than one device, the entire group of signaling devices in the building shall be considered the equivalent of one device. Under this condition, one signaling circuit shall serve not more than the number of signaling devices which results in the connection of not more than 250 sets of coded signaling contacts (one set for each code wheel of a device) in twenty-five or less buildings.*

2680. Number of Sprinkler Supervisory Signal Type Transmitting Devices per Circuit.

2681. *Where only sprinkler system attachment supervisory signal devices are connected, one signaling circuit shall serve not more than twenty-five sets of transmitting devices which result in the connection of not more than 100 sets of coded signaling contacts (one set for each code wheel of a device) in twenty-five or less buildings.*

manual fire-alarm service (article 310)

3110. Fire Alarm Boxes.

3111. General. *Manual fire alarm boxes shall be approved for the particular application and shall be used only for fire protective signaling purposes. Combined fire alarm and watchman's signaling boxes are acceptable.*

3112. Mounting. *Each box shall be securely mounted. It is recommended that the bottom of the box be not less than 4½ feet and not more than 6 feet above the floor level.*

3113. Distribution. *Manual fire alarm boxes shall be distributed throughout the protected area so that they are unobstructed, readily accessible, and located in the normal path of exit from the area, and as follows:*

a. One box shall be provided on the first floor and on each succeeding alternate floor except that one box shall be provided for each floor where the maximum fire area is 10,000 square feet or more.

b. Additional boxes shall be provided on each floor to obtain a maximum horizontal travel distance of 200 feet to the nearest box.

3114. Coded Signal Designations. *A coded fire alarm box shall produce not less than three signal impulses for each revolution of the coded signal wheel.*

Note: The following suggested coded signal assignment for a building having four floors and basements is provided as a guide:

Location	Coded Signal
4th Floor	*2-4*
3rd Floor	*2-3*
2nd Floor	*2-2*
1st Floor	*2-1*
Basement	*3-1*
Sub-basement	*3-2*

automatic fire detection service (article 330)

3311. *The provisions of this Article apply to systems employed for automatic fire alarm signals.*

3320. Supplementary Manual Alarm Signal Operation.

3321. *Supplementary means for manually operating an automatic fire alarm system for an alarm signal should be located where designated by the authority having jurisdiction.*

3330. Detecting Equipment.

3331. Location. *Detecting equipment shall be installed throughout all parts of the protected premises including all rooms, halls, storage areas, basements, attics, lofts and other subdivisions and accessible spaces; and inside all closets, elevator shafts, enclosed stairways, dumb waiter shafts, chutes, and other minor subdivisions and enclosures.*

a. Where codes, standards, laws or authorities having jurisdiction require the protection of selected areas only, the specified areas shall be protected in accordance with this Standard.

b. For the purposes of this article the area underneath a deck, mezzanine, or floor landings of stairways having a minor dimension of ten (10) feet or more shall be considered a separate subdivision and shall be protected accordingly.

c. Protection may be required under large benches, shelves, or tables and inside cupboards or other enclosures not extending to the ceiling.

d. Protection may also be required underneath open loading docks or platforms and their covers, and for accessible underfloor spaces of buildings without basements.

3332. High Temperature Areas. *Special instructions shall be obtained from the authority having jurisdiction regarding the use of high temperature degree thermostats in boiler rooms, heating boxes, skylights, etc.*

For locations having normal temperatures the detectors (thermostats) used are rated at approximately 136 F. For high ambient temperatures such as boiler rooms, a detector rated at approximately 190 F is used.

3334. Support. *Thermostats shall be supported in all cases independently of their attachment to the wires.*

Most detectors for fire-alarm systems of this type are designed for mounting on 4" octagon box.

3335. Tests. *Fire detectors shall be tested periodically as specified by the authority having jurisdiction.*

Tests pertain to maintenance and would not be normally written in the specifications for equipment to be furnished and installed.

basic types of systems available

As is true for any type of equipment, standard commercially available items should be specified wherever possible, so that procurement does not present any problems. There are several types of fire-alarm systems which will meet this requirement and which may be applied to the great majority of installations within the scope of this article. These systems, all of which will meet NFPA No. 72, if so specified, are as follows:

Noncoded: Operation of any manual box sounds all alarm

* *Chief Sales Engineer, Edwards Company, Inc., Norwalk, Conn.*

signals continuously until box has been restored to normal. The boxes are of the noncode type and when its lever is pulled, contacts in the box close. The audible signals may be horns or vibrating bells; however, in schools, horns should usually be used so as not to be confused with the program bells (see Article 250, Par. 2520). A control panel is required to supervise the system and a trouble bell is furnished to indicate faults on the system's wiring. When the installation requires automatic detection in storage areas, boiler room, etc., thermostats are used at those locations. These thermostats when operated give the same continuous alarm signal as the manual boxes. This noncoded system is used for smaller buildings, one-story schools, etc., where the location of the fire need not be indicated by the system. It is the simplest and least expensive of the basic systems listed herein.

Some installations such as nursing homes, dormitories, small hotels, etc., that are used for sleeping quarters are usually required by local ordinances to have a system with automatic fire detection throughout the building and a zoned indication of the location of the fire at a central point. Manual boxes should also be installed in the normal path of exit (see Article 330, Par. 3321). An audible alarm is given throughout the building for evacuation purposes or general alarm. For these installations a control panel is required to supervise the system, and mounted on its door (or at a remote location) are the required number of zone-indicating lamps. The building should be divided into zones in such a manner that location of the fire within the zone can be easily observed. For example, there should be at least one zone per floor or wing. Some local or state codes limit the number of detectors (thermostats) per zone, such as 65, which may be considered good practice. The location, etc., of the detectors is outlined in Article 330, quoted above. There are systems available for this type of application which use limited-energy circuits to permit the use of low-voltage wiring for the detector circuits (Article 210, Wiring Par. 2180). This type of system is known as an Automatic Noncoded Zoned Low-Voltage Fire-Alarm System. For those applications that do not have highly dependable power service, such as resort hotels in the country, this system can be furnished so that should there be an interruption in the main operating-power supply (electric-light or power service) the system will be automatically transferred to an emergency auxiliary source of supply, such as batteries. The proper type and size of batteries to operate the system should be as recommended by the manufacturer of the fire-alarm system and should meet the provisions outlined in Article 220 Power Supplies Par. 2240 or 2260.

Common-Coded: Operation of any manual box or detector (thermostat) operates a code transmitter on the supervisory control panel which transmits a predetermined code (such as 4-4) to all of the alarm signals in the system. The alarm signals may be single-stroke bells (such bells are considered distinctive from vibrating program bells) or horns. This system is recommended for smaller buildings, one-story schools, etc., where a distinct coded evacuation signal is required without need for locating which station has been operated. It has no particular advantage over the Noncoded System and is somewhat higher priced since a code transmitter is required on the control panel.

Coded: Operation of manual coded box sounds code of that box on all alarm signals. Boxes are usually equipped so that they give four complete rounds of code (see Article 310, Par. 3114 for suggested coding). Alarm signals should be single-stroke bells or chimes. Horns are seldom used as they do not respond to coding as satisfactorily as single-stroke bells. When detectors (thermostats) are required to give automatic protection in certain unguarded areas such as storage rooms or if water-flow alarms of a sprinkler system are desired, motor-operated code transmitters are provided on the control panel to sound the code of that area over all the alarm signals. This system is recommended for large buildings, high schools, factories, etc., where it is desirable to know the exact location of the fire. This system, therefore, serves a dual purpose-evacuation and fire location.

Presignal Coded: Operation of manual coded box sounds code on all presignal devices (Article 200, Par. 2044). A general alarm may be sounded from any box only by authorized personnel having special key which is inserted into the box. Same types of signals are used as with coded system; however, the presignal-alarm signals are usually chimes or 4" bells so that signal is confined to the central locations and will be heard only by the operating personnel. The general alarm bells, of course, must be located so that they can be clearly heard by all occupants of the building (Article 250, Par. 2511). Detectors (thermostats) and water-flow alarms may be combined with this system as is described in the coded system. This system is recommended where fire should be located and investigated by authorized personnel before sounding evacuation by general alarm such as in hospitals, hotels, etc. It should only be used where such authorized personnel is on duty at all times.

additional features available for basic systems

Auxiliary Systems (Article 420): It is sometimes desirable to tie the local fire-alarm system to the municipal fire-alarm system in order to eliminate the delay traversing the distance from the fire to the street box. It is first necessary to determine that the municipal system is suitable for such

connection, then to obtain a permit from the municipal authorities. This type of operation is obtained by the use of an auxiliarized master box (not a municipal street box) which is wired into the municipal system and is also electrically connected to the local system. The master box may be tripped either by energy from the local system (this is known as local-energy type) or by the opening of an extended circuit from the master box to the local system (this is known as shunt-trip type). When the shunt-trip type master box is used, it must be installed so that there is not more than three feet of rigid conduit between the master box and the control panel of the local fire-alarm system. Master boxes shall have indication visible from outside of the box, with an alarm bell for audible indication, to show whether the box has been reset—unless boxes are of the self-resetting type.

It is very important to note that the system shall be so designed and arranged that trouble on the local system shall not jeopardize operation of the municipal system, and shall not, in case of trouble on either the local or the municipal system, transmit a false alarm of fire. It is recommended that this statement be put in the specification so that it is not overlooked by the contractor.

Operation of the boxes and thermostats in the local system shall be so arranged that the master box is always tripped and also sound the local alarm. Although the complete auxiliary system should be tested periodically (per Par. 4214), municipal fire departments and the owner of the local systems usually require that it shall be possible at certain times to test only the local system. Such an arrangement can be supplied by the manufacturer of the local fire-alarm system through the use of special keys for testing or a test switch with pilot lamp.

Remote-Station Systems (Article 430): It is sometimes desired to tie the local fire-alarm system by direct connection to signal-indicating equipment in a remote station such as fire or police headquarters. This may be done over the fire-protective signaling system and not employed for a municipal fire-alarm system. The circuit between the local system in the protected premise and the remote station must be electrically supervised so that a single-open or a single-ground fault which prevents its normal signaling performance will be indicated by a distinctive trouble signal at the remote station or other place acceptable to the authority having jurisdiction. Facilities shall be provided for transferring the audible trouble signal to a lamp or other acceptable annunciator to silence the trouble-signal bell.

Loss of a source of energy or a single-open or single-ground fault at any part of the complete system shall not result in a false alarm at the remote station. If these faults interfere with the normal operation of the local system, they must be indicated by a distinctive trouble bell at the remote station or other place acceptable to the authority having jurisdiction.

The alarm-indicating bell or register circuits and their source of energy within the remote station need not be electrically supervised. Provision shall be made for silencing this bell and this silencing operation shall be indicated by transferring the signal to a lamp or other acceptable annunciator. A distinctive alarm signal shall be provided at the remote station for each building or, where permitted by the authority having jurisdiction, for each group of buildings of single ownership or occupancy.

Annunciators: When a visual indication of the fire's location is desired to assist fire-fighting personnel, an annunciator may be added to the basic systems described above. The annunciator should be located at a clearly visible central point of the premises to be protected. Drop-type annunciators are considered more reliable than lamp type as there is no possibility of lamp burn-out. These annunciators should be designed so that the coils of the drops are cut out of the circuit upon indication, thereby eliminating the possibility of the drop coils burning out regardless of the time that the initiating circuit (box or thermostat) remains closed. The annunciator's operation is as follows:

When a manual box is pulled or a detector operates, it will cause alarm signals to sound (as described above for the specific type of system being used), the associated drop in the annunciator will indicate the location of the operated box or detector, and an audible signal at the annunciator will sound. The operated drop cannot be reset until its associated manual box or detector has been restored to normal. The annunciator bell may be silenced but in such a manner that it will automatically sound upon the subsequent operation of another box or detector. The wiring from the boxes or detectors to the annunciator need not be supervised (Article 240, Par. 2422b).

Punch Registers and Time Stamps are used to give a permanent record of fire alarms from coded systems. The signals are recorded by punctures in a paper tape which is fed from the punch register. A take-up reel is used in conjunction with the register and it automatically reels up the tape bearing the recorded signals in rolls convenient for filing. The time stamp is a separate unit and automatically provides an accurate record on the paper tape from the punch register of the exact minute, hour, A.M. or P.M., day, month, and year at which all signals are received and transmitted over the coded fire-alarm system. These devices are primarily used only on extensive systems. Their cost does not usually warrant their use with the average fire-alarm system in schools, hospitals, etc.

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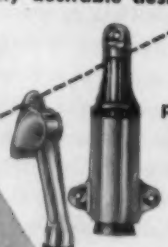

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by Ben John Small

spec small talk

new standard

What's new about the new new U. S. Commercial Standard covering Douglas Fir plywood? Here's what's new:

New Underlayment Grade—Standard will establish new low-cost underlayment grade identified "Plybase." This is a sanded structural grade of fir plywood with one "repaired" surface smooth, solid enough to be used under all kinds of resilient flooring. Inner ply adjacent to face ply is solid enough to eliminate danger of "punch-through." Because of cost advantages, workability, nail-holding strength of fir plywood, new grade should save money in many instances. In heavier thicknesses it will be suitable for combination subfloor and underlayment. (The mark *Plybase* previously was used on a different panel.)

New Items—Standard sets up two new "special order" items for use with clear or natural finish. Because these items are made in limited quantities, they should be specified only where their premium appearance factor is mandatory. First is a "one-side" panel with select face veneer of 100% heartwood. Generally available only in ¼" stock, item is intended for use as wall paneling, wainscoting. It is described as Natural Finish One Side (grademarked Interior N-D, DFPA). Second item is a ¾" panel with two select panel faces, solid inner plys for cabinetwork, known as Natural Finish Two Sides (grademarked Interior N-N, DFPA).

Better "A" Faces—New requirements in grading rules improving appearance quality of "A" veneer are imposed by standard. This is highest standard appearance quality veneer used for faces in grades like Plypanel and Plyshield where panel will show. "A" face panels will present surface suitable for painting; if such panels are to be finished so that grain shows through, selection of panels for pattern, appearance is recommended before installation.

Overlaid Fir Plywood—Standard sets up for first time requirements for overlaid fir plywood with smooth, resin-impregnated fiber surfaces permanently fused to both panel faces, covers two grades of overlaid plywood, one medium density overlay, other high-density overlay. First provides perfect "tooth" for paint cover. High-density grade has glass-smooth, relatively clear, abrasion resistant surface.

Interior Gluelines Strengthened—Standard provides in writing for fortification of interior type adhesives used in structural grades of fir plywood. This has been standard practice in panels bearing industry trademarks such as Plyscord and Plyform for several years.

Panels with special decorative or textured surfaces bearing industry owned grade-trademarks are made as per new glueline performance standard. These include such items as Texture One-Eleven.

Standard specifies nine grades of Interior type, seven grades of Exterior type fir plywood.

A printed copy of standard is available without charge from Douglas Fir Plywood Association, Tacoma 2, Wash. I could have said so in the first place. *N'est ce pas?*

watch pooch

One of the most progressive educators in the business, Dr. John L. Miller, Superintendent of Schools, Great Neck, N. Y., told me of a new wrinkle he has up his ample sleeve, that has me somewhat puzzled. Our office is doing a junior-senior high for him that sprawls over a considerable piece of real estate. Dr. Miller got to thinking about the difficulty of protecting the school's investment, with a minimum of personnel, during and after construction. In order to cover properly the spread-out structures, specially trained dogs and a watchman do the trick. In addition to watching the watchman watch, the dogs will alert him to anything suspicious. They are trained to snatch guns faster than a man can draw. They can recognize a furtive move when they see one. Smoke causes them to vent a warning bark. The animals are trained to hold a suspect and not attack unless attacked. Now here is something amazing. They can transfer their allegiance to any designated person—and even attack their masters. The dogs could be seemingly listless and drowsy, but upon the signal "watch" they become razor-sharp alert. My problem, dear colleagues, is how do you specify a union Doberman pinscher?

spex vex

Hooray! I found someone who reads this column. (I can prove it, too!) In April I wrote:

"To the channels secure QQ-B101c, Type FR; apply C35-53T mixed with SS-P-402. Type N or C28-50 and finish with SS-P-402, except in Auditorium wherein use SS-A-111." If you are interested in this and many other fascinating ASTM and Fed. Spec. numbers, referenced particularly to National Gypsum Company products, ask for their splendid *Technical Bulletin No. 2119* entitled *Product Specification Directory*. Personally, I never use ASTM and Fed. Spec. references unless a client (City, State, Federal) requires it. Contractors complain they have to maintain a young Library of Congress if they are to be *au courant*.

The Southern California Chapter of the Construction Specifications Institute, Inc., writes in its April *Specification Digest:*

"How many of you agree that it is better never to use ASTM and Fed. Spec. references? We don't; in fact we use them quite frequently. Perhaps, however, we have a bad habit and have used them at times when we should not have. But we can see no reason for not using them when they are used by reference in so many building codes, in Title 21, by manufacturers in their literature and are even stamped on the manufacturers' containers. And, have you had any complaints from contractors?

"There have been and now are a considerable number of specs in circulation in Los Angeles in which the following paragraph appears in the General (or Special) Conditions:

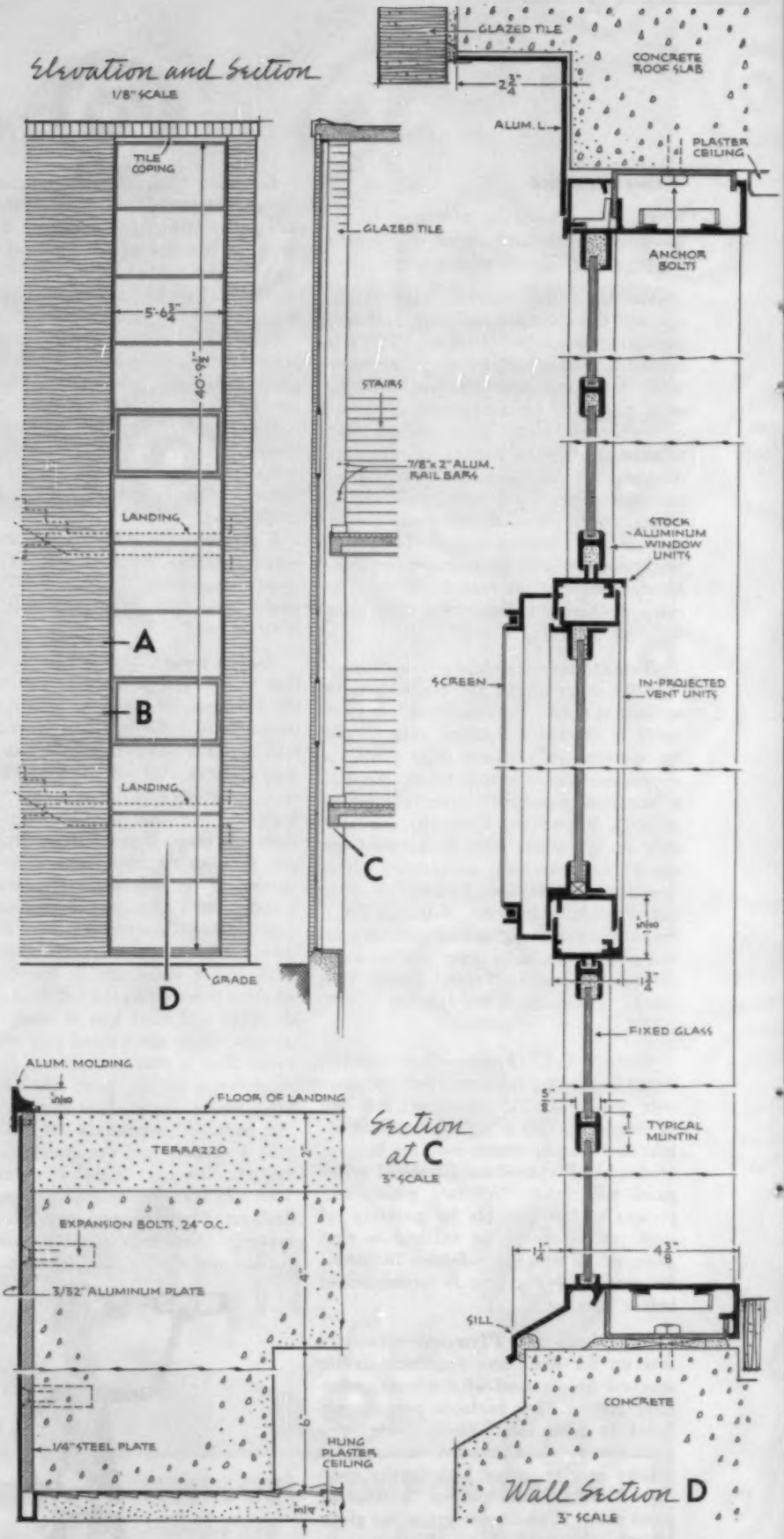
" 'Where these specifications stipulate or infer that a material shall conform to American Society for Testing Materials (A.S.T.M.) Specifications or other recognized standards, the Contractor, when so requested by the Architect, shall deliver to the Architect an affidavit or certificate, signed by the manufacturer or supplier, that the material furnished conforms to the specifications or standards mentioned.' "

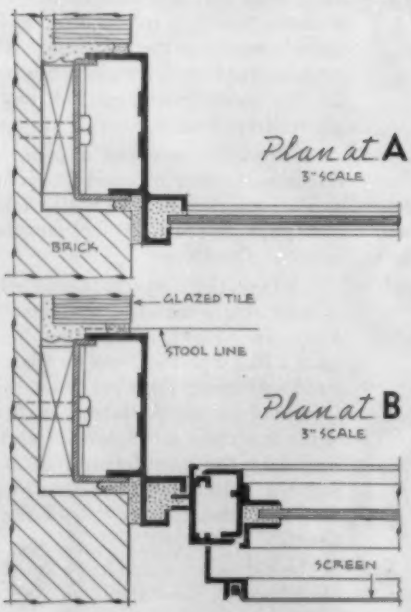
The Editor then solicits comments from his Chapter. How about your'n? Hello, hello, are you there out there?

Somebody say something, please?

stair enclosure

MOLITOR

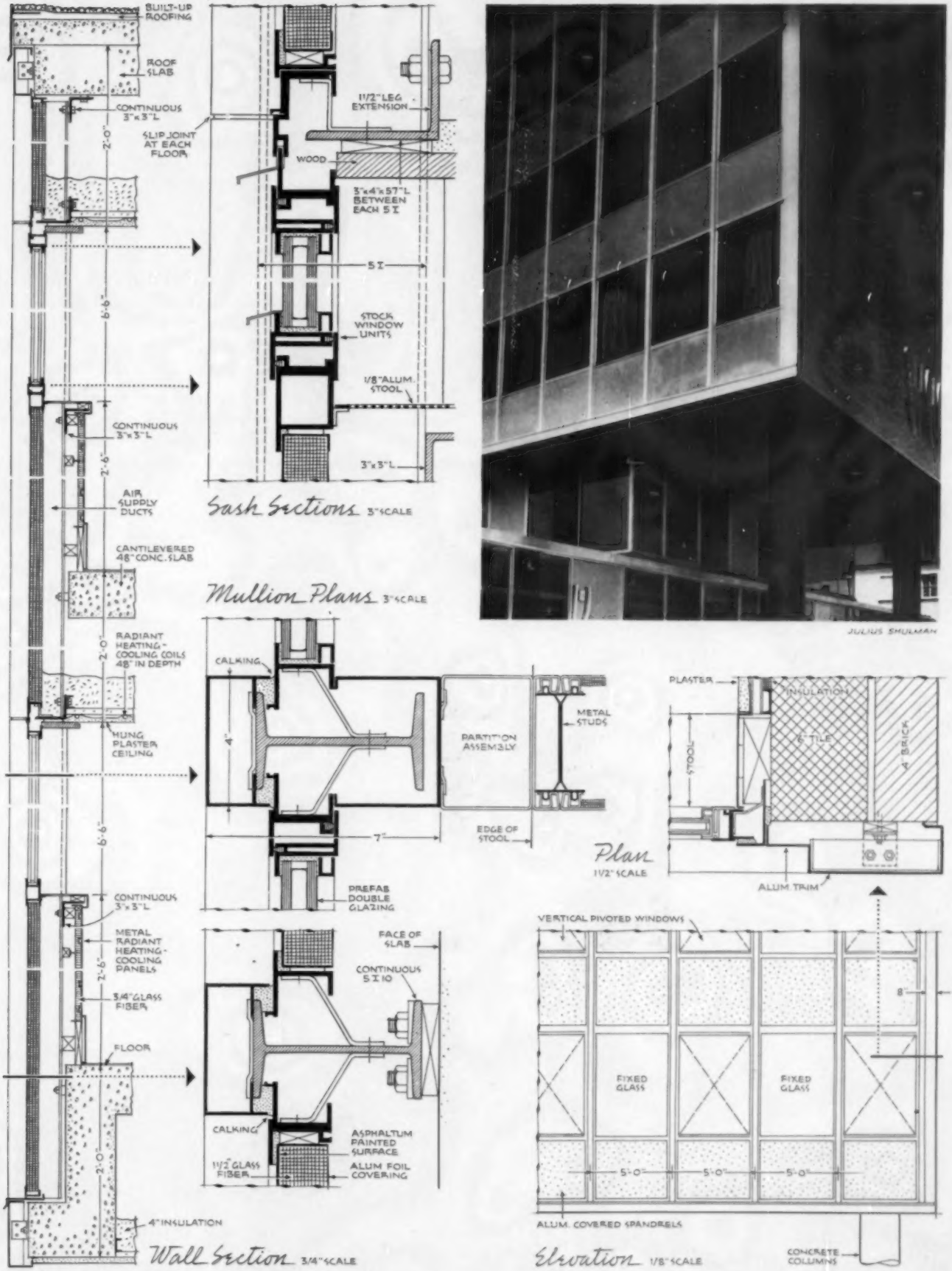




ARCHITECTURE BUILDING, Atlanta, Ga.

Bush-Brown, Gailey & Heffernan, Architects

curtain wall

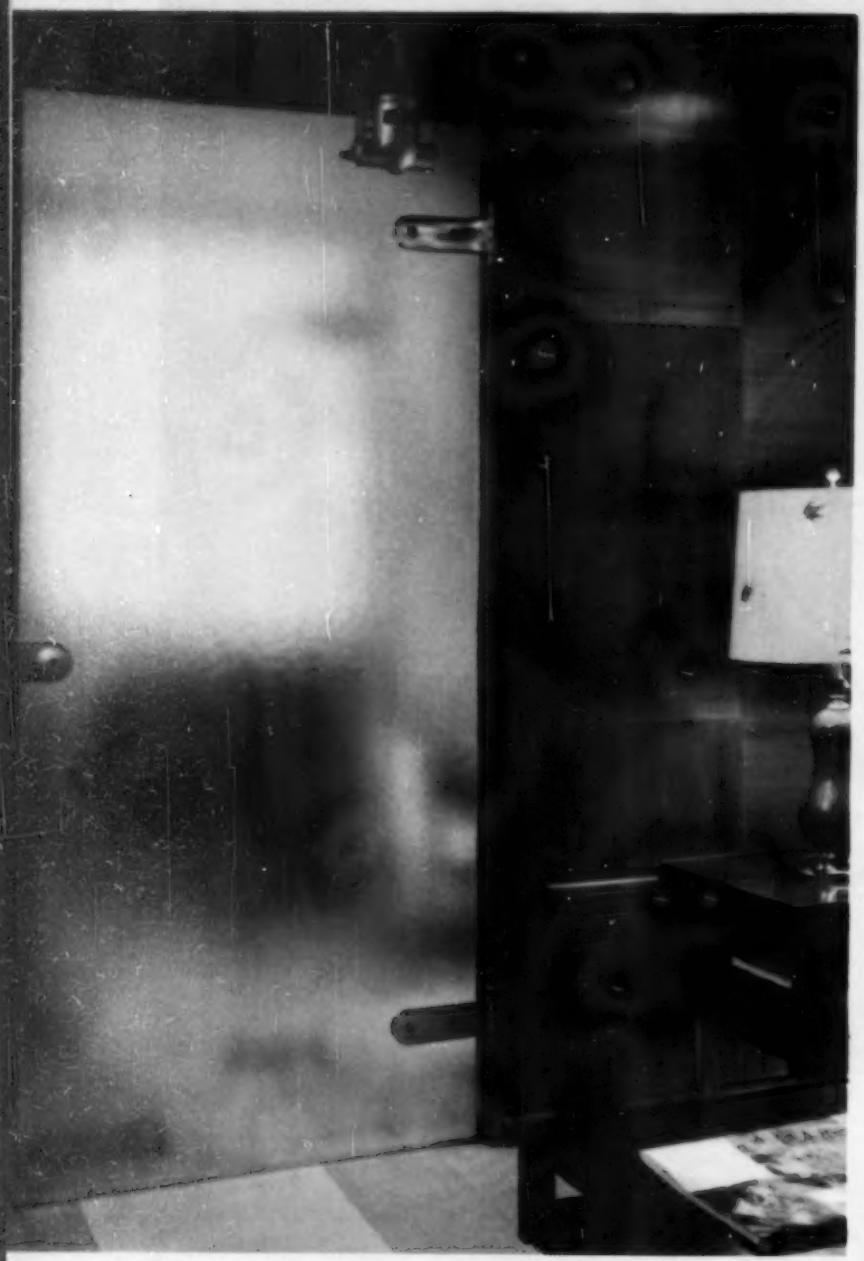


JULIUS SHULMAN

OFFICE BUILDING, Albuquerque, N. Mex.

Max Flatow & Jason Moore, Architects

Capture light and color **through** a door



Architects: Hudgins, Thompson, Ball and Associates, Oklahoma City

This beautiful translucent glass door borrows light and color from another room but still maintains privacy. Here the architects designed their own offices to use the soft warmth of patterned glass to balance the polished wood of the walls and furnishings.

The *Securit** Interior Glass Door by Blue Ridge is neutral in tone. Its gentle pattern complements the decoration of both rooms. It's a door that can take plenty of daily hard use because it's tempered to be tough.

Distinctive, easy-to-apply hardware arrives at the job with the door, making it simple to hang. No cutting or mortising is necessary, and you can forget about painting and costly maintenance.

The cost of the *Securit* Interior Glass Door compares favorably with that of high-quality doors of other materials. You save on installation charges as well.

Ask your L·O·F Glass Distributor or Dealer for full information. Look for him under "Glass" in the yellow pages of the phone book. *●

BRIEF DATA

Glass—3/8" thick Muralex patterned on both surfaces.

Tempered—three to five times stronger than untempered glass of same thickness.

Reversible—can be used right or left hand.

Standard Sizes—2'6" x 6'8" 2' 5 1/16" x 6' 7 1/16"
2'8" x 6'8" 2' 7 1/16" x 6' 7 1/16"
3'0" x 6'8" 2'11 1/16" x 6' 7 1/16"
3'0" x 7'0" 2'11 1/16" x 6'11 1/16"

For more complete information, see the Securit Door insert in Sweet's Architectural File.

.securit INTERIOR GLASS DOORS

BLUE RIDGE GLASS CORP. Made by BLUE RIDGE GLASS CORP.

Sold by LIBBEY·OWENS·FORD Distributors L·O·F GLASS

Libbey·Owens·Ford Glass Co.
608 Madison Ave., Toledo 3, Ohio

Please send me your folder, *Blue Ridge Securit Interior Glass Doors.*

NAME (PLEASE PRINT) _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

Louise Sloane **selling areas**

Interior design as a contributive factor to sales—whether of merchandise or of services—continues to broaden its sphere of influence. To demonstrate, the diversified selling areas we present include a specialty shop within a retail store, a traveling coach display, an airlines ticket office, a wholesale showroom, two retail specialty stores. The design requisite common to all was a suitable background for product or service sales. Each interior is a skilful treatment, sensitive both to the character of the commodity to be sold and the customer to be reached.

Gottscho-Schleisner

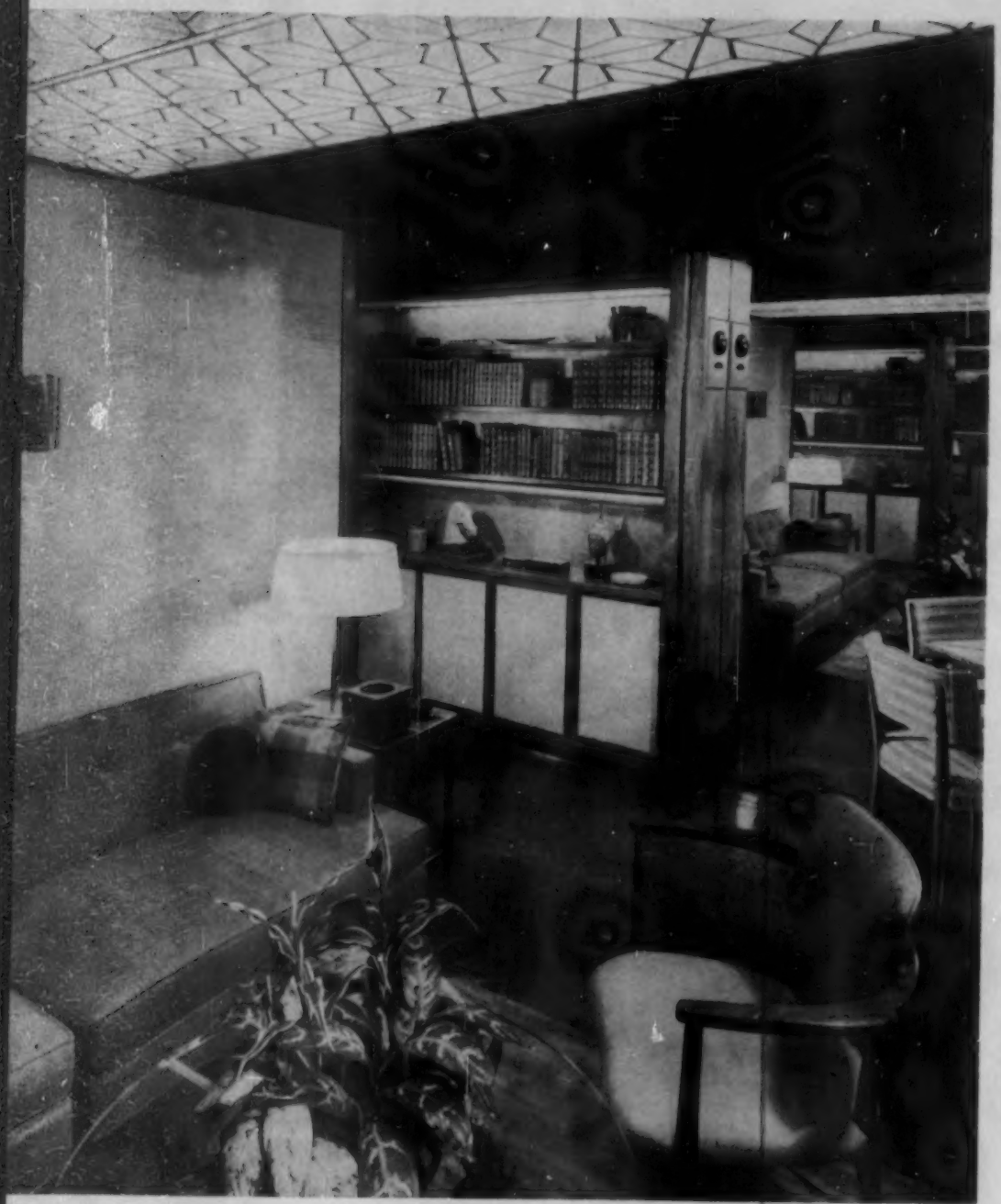
Bridal Salon, Martin's, Garden City, L. I./ Morris Lapidus, Architect/ gray carpet, pale-pink ceiling, blue and aqua accents. ***Cabinetwork:*** *Heinzmann & Waldman, 80 Third St., Brooklyn, N. Y.;* ***Blinds:*** *Thru-Vue Vertical Blinds, Rye, N. Y.;* ***Furniture:*** *Knoll Associates, 575 Madison Ave., New York, N. Y.;* ***Lighting:*** *Finland House, 41 E. 50 St., New York, N. Y.;* ***Walls:*** *"Strawtex"/ Gilford Leather Co., 515 Madison Ave., New York, N. Y.*

In the Lapidus Bridal Salon, pastel colors and an air of luxury create feminine appeal, as in the Ketchum, Giná & Sharp Wallach's and in Hertzka & Knowles Nunn-Bush stores, a masculine atmosphere is distilled through natural tones and textures, and strong, bold planes.

Don Knorr's KLM ticket office effectively merchandises the airline's trademark colors by repeating them in its color plan, suggests the speed, comfort, and lift of air travel through architectural and display elements. William Shinderman's office-showroom-stockroom for Buxton is planned for the convenience and service of buyers, as well as for the efficient conduct of the company's business routine.

Edward Wormley's traveling coach for Superior Electric Company's "Luxtrol" dimmer control is a merchandising *tour de force*, accomplishing with tremendous ingenuity and imagination the "in-action" display of a product that demands demonstration, in realistic interiors that can travel compactly around the country. You will want to see this extraordinary exhibit when it comes to your city, as a stimulating example of design.

selling areas



mirrored reflection extends illusion

data

Design Theory: House-on-wheels to demonstrate "Luxtrol," home-lighting control. More than 30 applications of home lighting are shown. Interiors in three-quarter scale, as are all furniture and accessories. Mirrors used to make furniture sections appear whole and to increase apparent floor space. Illusion of full size is completely achieved through scale and mirror use.

Color Plan: Walnut paneling sets general color tone. Brilliant hues of pinks, blues, greens chosen to demonstrate vividly effect of dimming light on color.

cabinetwork

Cabinets, Paneling, Wood Partitions: Rundbaken Displays, Inc., 1125 Main St., East Hartford, Conn.

furniture and fabrics

Furniture: Dunbar Corporation, Berne, Ind.

Fabrics: Thaibok Fabrics, Ltd., 3 E. 57 St., New York, N. Y.; Inez Croom, Inc., 56 E. 55 St., New York, N. Y.; Boris Kroll Fabrics, Inc., 220 E. 51 St., New York, N. Y.; Jofa, Inc., 45 E. 53 St., New York, N. Y.; Scalamandre Silks, Inc., 598 Madison Ave., New York, N. Y.

Woven Roll Blinds: blond wood, gold, copper/ Dorothy Liebes, 305 E. 63 St., New York, N. Y.

lighting

Installed Lighting: Garden City Plating & Mfg. Co., 1750 N. Ashland Ave., Chicago 22, Ill.; Kliegl Bros., 321 W. 50 St., New York, N. Y.; Rambusch Decorating Co., 40 W. 13 St., New York, N. Y.; Lightolier Co., 11 E. 36 St., New York, N. Y.; Finland House, 41 E. 50 St., New York, N. Y.; Nesle, 151 E. 57 St., New York, N. Y.

Portable: Hansen, 978 First Ave., New York, N. Y.

walls and flooring

Walnut Paneling: United States Plywood Corp., 55 W. 44 St., New York 36, N. Y.

Grasscloth: Kneedler - Fauchere, 451 Jackson St., San Francisco, Calif.

Mirrors: Libbey-Owens-Ford Glass Co., 99 Park Ave., New York, N. Y.

Vinyl Tile Floors: Sloane-Delaware Floor Products, Inc., 295 Fifth Ave., New York, N. Y.

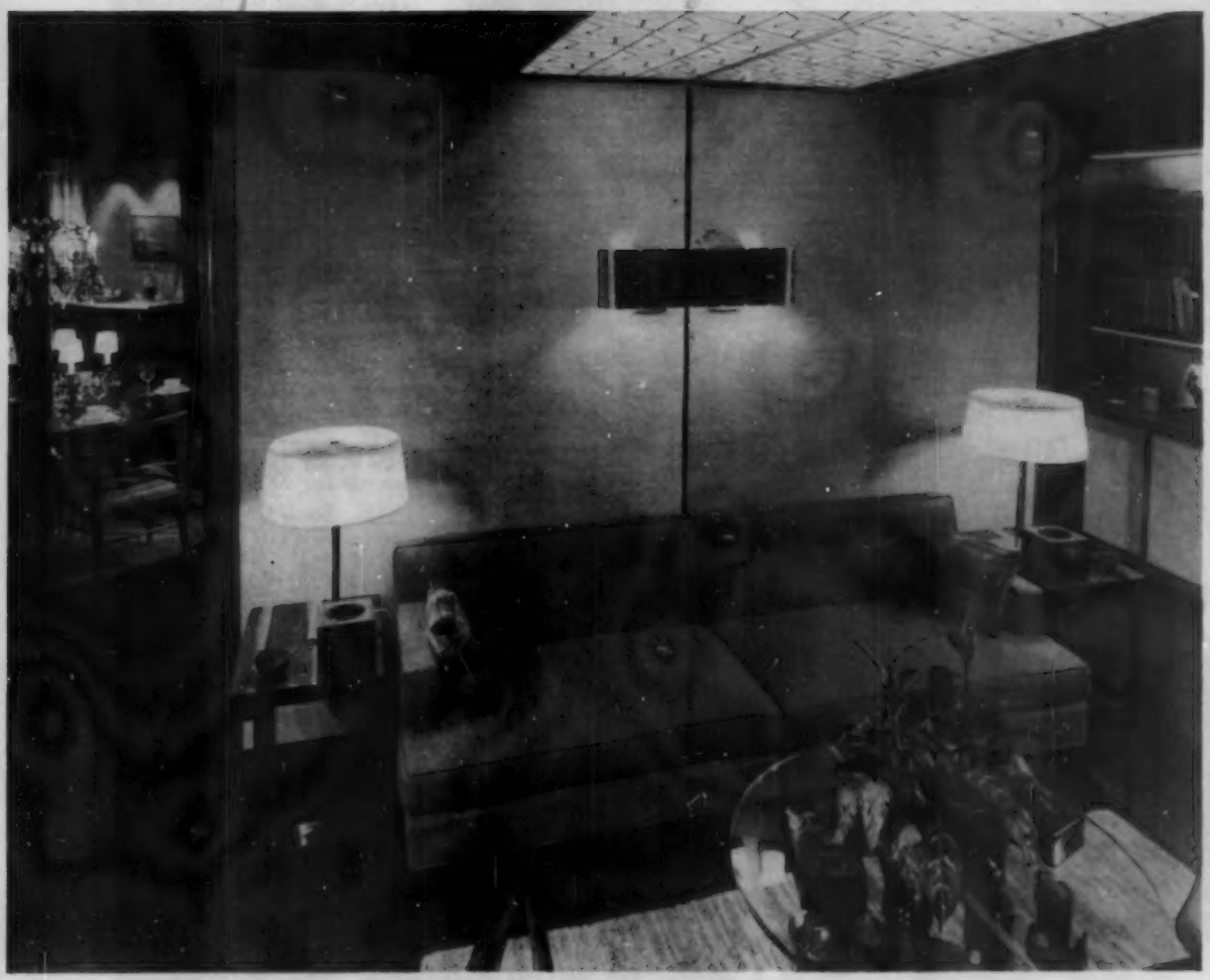
Hand-woven Rugs: E. M. Jamgotchian, 37 Avenue A, Port Washington, N. Y.

traveling coach displays six rooms

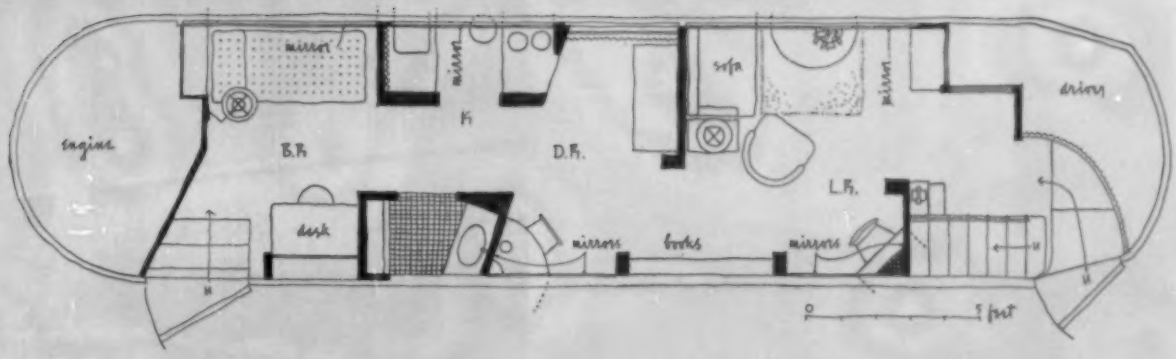
client	Superior Electric Company
problem	traveling coach display
designer	Edward Wormley
associate	Edward Crouse

controls for visitor manipulation

quarter-table creates dining "room"

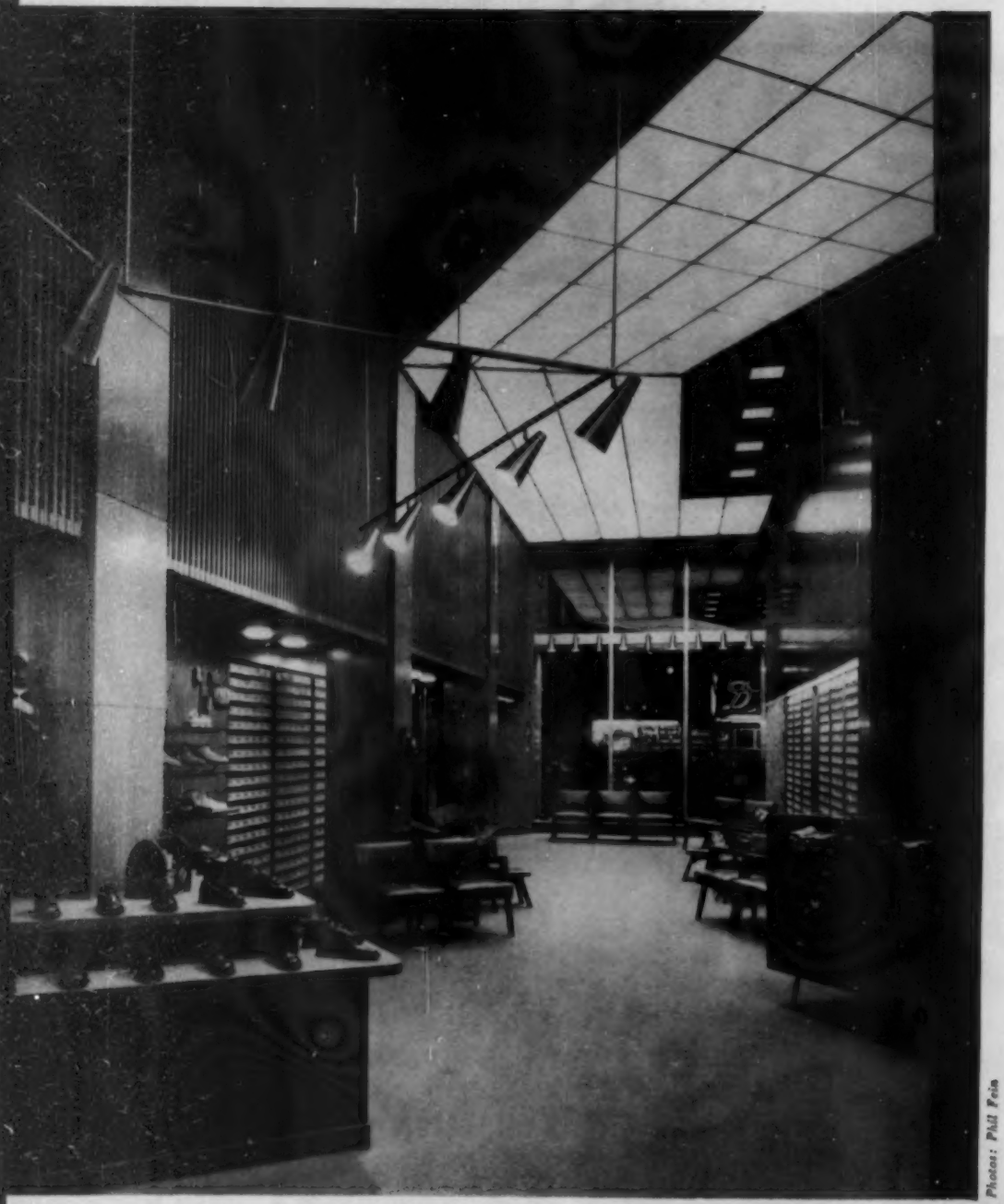


Photos: J. Alex Langley



selling areas

client	Nunn-Bush Shoe Company
problem	retail shoe store
architects	Hertzka & Knowles



Photos: Phil Pein

data

Design Theory: Interior materials (pink granite, walnut, pigskin, carpeting, linen) selected for richness to reflect quality of merchandise. Sloping floor (upward approximately 1' in 40') influenced total design. Entire floor area is on a cant except in stock room, necessitating special skills both in drawing and construction stages.

Color Plan: Principal colors are natural colors of materials. Pink granite, tawny-brown walnut, white ceiling, warm gray carpet, natural pigskin tile inlay in shadow-box frame behind wrapping counter. Accent is turquoise in chair seats and combined with sienna on natural linen background of draperies.

cabinetwork, partitions, walls
Mullen Manufacturing Co., 85 Rausch St., San Francisco, Calif.

windows
Kawneer Company, 830 Dwight Way, Berkeley, Calif.

lighting
Luminous Acoustical Ceiling: F. K. Pinney Co., 636 Clay St., San Francisco, Calif. **Suspended Display Lights, Recessed Ceiling Lights, Recessed Show Window Lights:** California Electric Supply Co., 1585 Folsum St., San Francisco, Calif.

floor covering
Carpet: Bigelow-Sanford Carpet Co., 295 Fifth Ave., New York, N. Y.

equipment
Shelf Holders: Garcy Plating & Mfg. Co., Chicago, Ill.

display unit shows samples of entire stock

luminous ceiling

data

Design Theory: Elements selected for look of space, airiness, lightness. Vertical dimension emphasized through vertical slat wall treatment, framing members. Lightness achieved through suspension on aircraft tension cable of time-table and brochure rack. Suspended luminous ceiling and open steel stairs contribute to floating look.
Color Plan: White, blue, orange, red—client's trademark colors. Light value of gray added on one wall.

cabinetwork

Design Workshop, 181 Bluxome St., San Francisco, Calif.

windows

Sash: aluminum-baked white enamel, custom/ Metalco, San Francisco, Calif.

furniture

Desks: designed by Don Knorr/ Design Workshop, 181 Bluxome St., San Francisco, Calif.
Lounge Furniture and Tables: designed by Don Knorr/ Vista Manufacturing Co., 1040 N. Olive, Anaheim, Calif.
Desk Chairs: Herman Miller Furniture Co., Zeeland, Mich.

lighting

Luminous Ceiling: Capco, San Francisco, Calif.
Bubble Lights: Howard Miller Co., Zeeland, Mich.
Window Drop Lights: designed by Don Knorr/ Hanschen & Goddard, San Francisco, Calif.

flooring

Vinyl Tile: Robbins Bros., Inc., 281 Fifth Ave., New York, N. Y.

mural

Map Mural: metal rod and Cemestos board/ designed by Anne Knorr.

client	KLM Royal Dutch Airlines
problem	transportation ticket office
designer	Don Knorr

map mural

open steel stairs

Photos: Ernest Braun

selling areas

client	Wallach's
problem	clothing store
architects	Ketchum, Giná & Sharp
architects-in-charge	Russ DiGrosa, Fred Treffiesen

uncluttered look, neutral colors

data

Design Theory: To show merchandise at its best without too much wood or metal acting as disturbing elements.

Color Plan: Scheme keyed to gray-and-white carpeting. White ceiling, some white walls, others in colored vinyl plastic, some brown tones.

cabinetwork

Henzman & Waldman, 80 Third St., Brooklyn, N. Y.

furniture and fabrics

Furniture: J. G. Furniture Co., Inc., 102 Kane St., Brooklyn, N.Y.; Herman Miller Furniture Co., Zeeland, Mich.; Janet Rosenblum, Inc., 602 Madison Ave., New York, N. Y.; Bonnier's, Inc., 605 Madison Ave., New York, N. Y.

Fabrics: Johnson & Faulkner, New York, N. Y.; Konwiser, Inc., 1 E. 53 St., New York, N. Y.

lighting

All Lighting: Century Lighting, Inc., 521 W. 43 St., New York, N. Y.

walls and flooring

Walls: vinyl plastic/ Guilford Leather Co., 515 Madison Ave., New York, N. Y.

Carpeting: Archibald Holmes & Son, K and Erie Sts., Philadelphia, Pa.

accessories

Planters: Architectural Pottery, Los Angeles, Calif.

carpeting as platform dado

Photos: James H. Reed

data

Design Theory: In a relatively small area, serving as office, showroom, and stockroom, space is subdivided with screens and separators to achieve semiprivacy, yet retain over-all effect of openness. All materials were selected to harmonize with the leather products on display. Divider screen is removable.

Color Plan: Off-white ceiling slate-gray and light-gray walls, accents of coral, gold. Natural colors of walnut, micarta, thin plastic, redwood, cork tile.

cabinetwork

Natural Walnut: Beiger Showcase and Fixture Co., 1515 E. 7th St., Los Angeles, Calif.

doors, partitions

Entrance Door: 8' high/ natural walnut veneer/ all other doors painted to match walls.

Partitions: ceiling-height/ plaster on metal lath.

windows

Windows: Painted to match walls.
Blinds: vertical blinds, venetian blinds/ Coast Shade and Venetian Blind Co., Los Angeles, Calif.

equipment

Air Conditioning: two-ton packaged air conditioner/ Chrysler Airtemp Co., 1119 Leo St., Dayton 1, Ohio.

furniture and fabrics

Furniture: sofa and table/ Vista Manufacturing Co., 1040 N. Olive, Anaheim, Calif.; chairs/ Herman Miller Furniture Co., Zeeland, Mich.
Draperies: Myron Sheward Co., Hollywood, Calif.

lighting

Ceiling Fixtures: recessed reflectors with opal-glass lens.

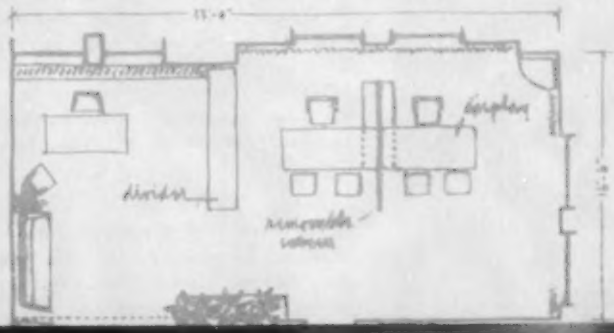
walls, ceiling, flooring

Walls: putty coat plaster or redwood siding/ plaster painted, redwood natural.

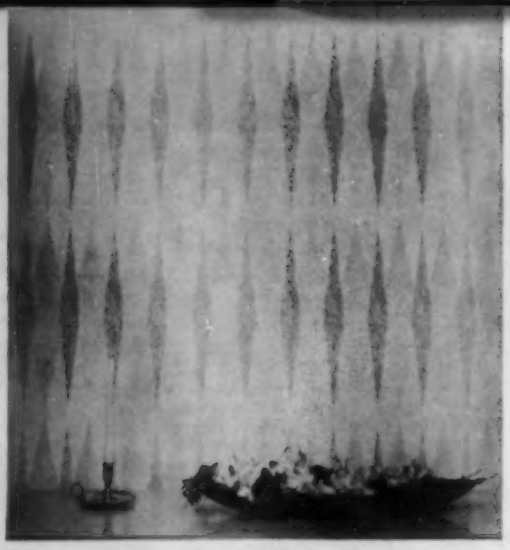
Ceiling: hard finish putty coat plaster, painted.

Floor: cork tile/ natural waxed finish/ Armstrong Cork Co., Lancaster, Pa.

client	Buxton, Inc.
problem	wholesale showroom
architect	William Shinderman

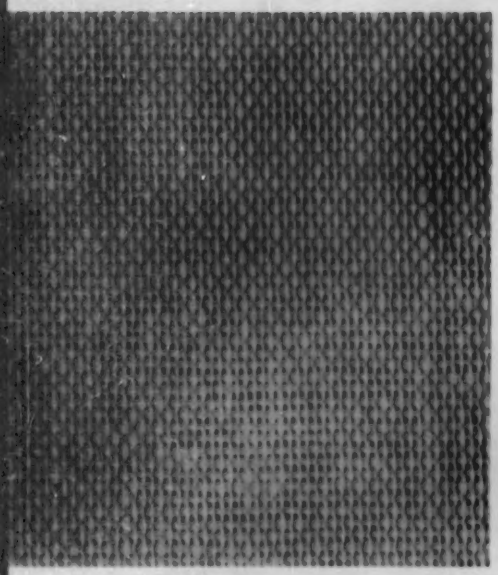


natural walnut storage separator



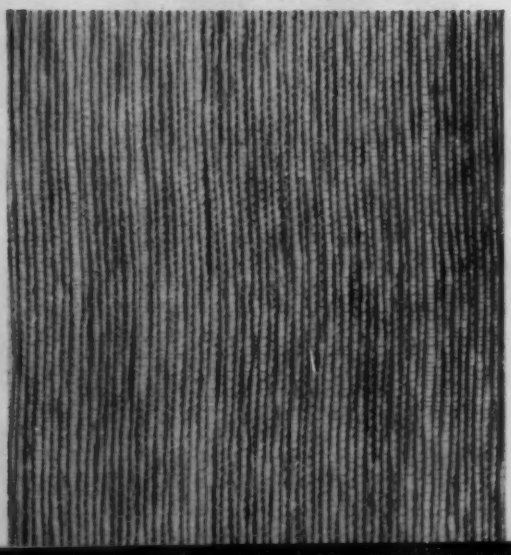
Vinyl Wall Fabric: (below) "Rambler House"/ locked-in color, scrubbable, scuff-proof/ stain- and abrasion-resistant/ line includes 75 designs/ 24" wide/ **retail:** $4.90 single roll/ **Joanna Western Mills Co., Wall Covering Division, 22 and Jefferson Sts., Chicago, Ill.**

Vinyl Wall Fabric: (above) "Styl-O-Vin"/ handprinted on cotton muslin impregnated with vinyl/ washable, color-fast, scuff-proof, flame-resistant/ 24" wide/ "Harlequin" design in coral and charcoal on white, pink and turquoise on silver, gold and black on white/ **retail:** $6.35 single roll/ also available in custom colorings/ **Wall Trends, Inc., 509 Madison Ave., New York, N. Y.**



Rigid Wall Coverings: (left) "Lam-O-Wall"/ hemp-like woven fibers laminated between Bakelite rigid vinyl sheets/ eight background colors/ .0175" thick/ 42" x 62" trimmed to cover 18 sq ft per sheet/ **Laminated Plas-Tex Corporation, 1427 W. North St., Springfield, Ohio.**

Fiber Glass Wall Covering: (below) "Glascloth"/ moisture-proof, fire-resistant, does not crack or tear, washable/ woven texture in wide range of colors/ protective finish on surface, backing of decorative paper/ **Fab Fashions, 38-49 Ninth St., Long Island City, N. Y.**



This is a Photo Reproduction of the New FORMICA® "Tawny Walnut"

Even the finest printing can never hope to do justice to the beauty and depth of pattern of the two new flat cut walnuts recently added to the Formica Sunrise Color Line. Turn the page to see the other side of this sheet for procedure to secure actual samples.

This is a Photo Reproduction of the

New FORMICA® "Autumn Walnut"

A brand new process enables Formica to bring you two beautiful new flat cut walnuts that are bold in grain character and furnish a larger area without repetition of pattern. For actual samples, *write*

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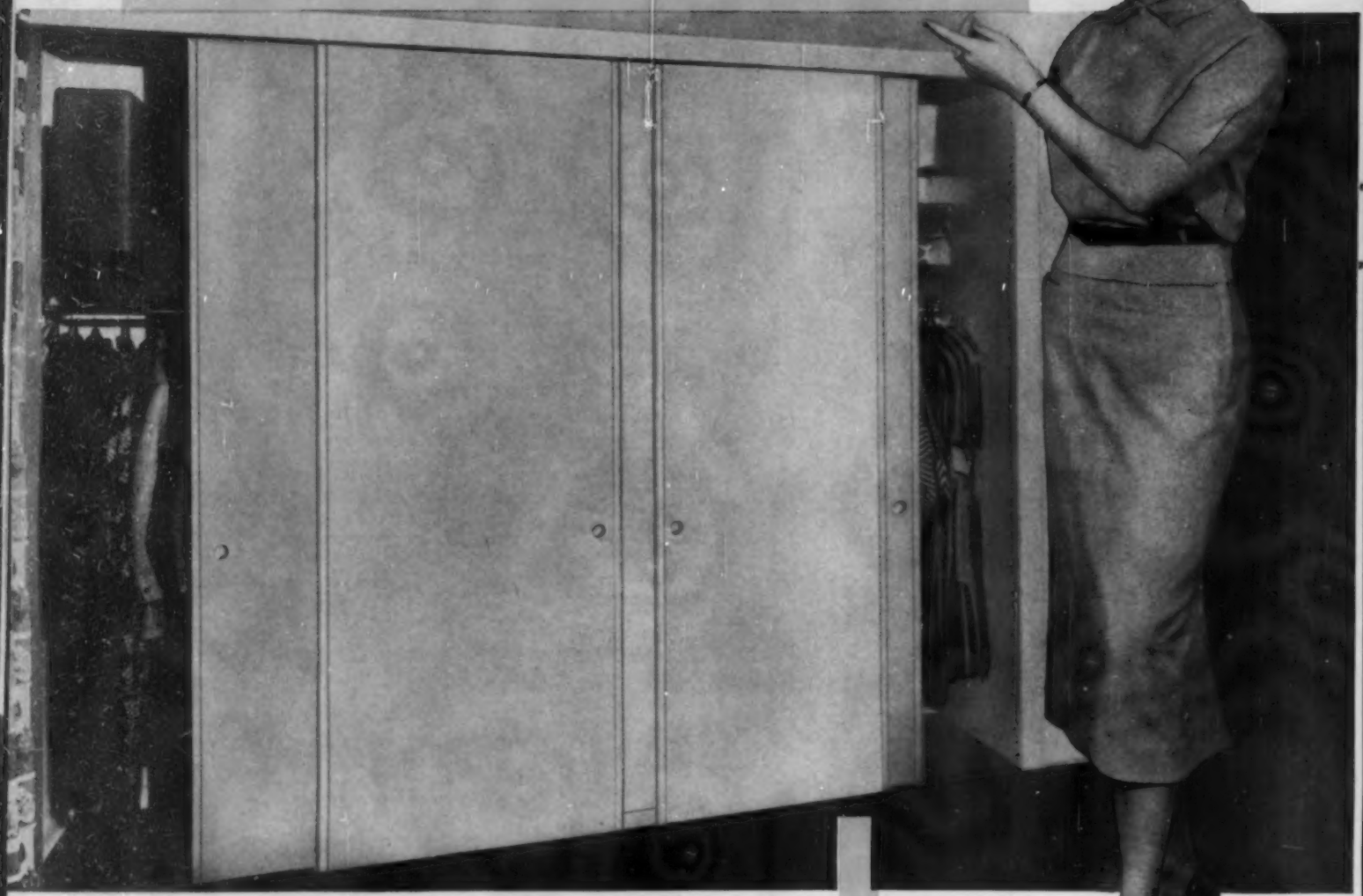
Flexible Plant Units: "Plantiers"/ frame, box, and shelf elements of sheet steel to be assembled in multiple ways/ frames black, boxes and shelves terra-cotta, gray, or yellow baked-enamel finish/ boxes and shelves may be placed at any height within frames, frames may be stacked or connected side by side/ removable galvanied tray in boxes/ heights are 18" and 24"/ **retail:** $5.95 to $8.95 for units of box, box and shelf, or 2 shelves/ designed by Don Wallance/ **Gottshalk Sales Co., 225 Fifth Ave., New York, N. Y.**

School Furniture: writing surfaces of 11-ply hardwood, "Textolite"-finished/ legs of heavy gage steel tapering from 1¼" diameter" five-degree pitch on chair backs, three-degree on seats/ self-leveling glides/ finishes in spring green, metallic mist-gray, non-reflecting satin chrome/ **Kuehne Manufacturing Co., Mattoon, Ill.**

Office Furniture: "Designer Group" cabinet and desk/ charcoal Formica tops, walnut pedestal, legs and drawer pulls satin chrome/ flush-closing sliding doors on cabinet/ tops available to customer's specifications/ walnut and brass lamp with Fiberglas shade/ **Westcort, 4 E. 52 St., New York 22, N. Y.**

Today's Houses Need

GLIDE-ALL® *Sliding Doors*



for More Storage Space the Low-Cost Way

Easy-to-use storage space, and plenty of it, is in great demand today. That's why Glide-All Doors are so popular with thousands of architects, builders and home owners. Glide-All Doors allow the simplest construction of wall-to-wall, floor-to-ceiling expansive wardrobes; full height, extra-space hallway closets; handy entranceway guest closets—in many "waste space" areas. With all their advantages they save construction time and costs, too. Glide-All Doors come ready to install, with built-in adjustment features, in 8′ and 6′8″ heights, flush or recessed panel types. Send for specifications and other details.

Glide-All Doors fit anywhere in the house . . . make closets wherever they're needed most.

GLIDE-ALL DOORS ARE A PRODUCT OF

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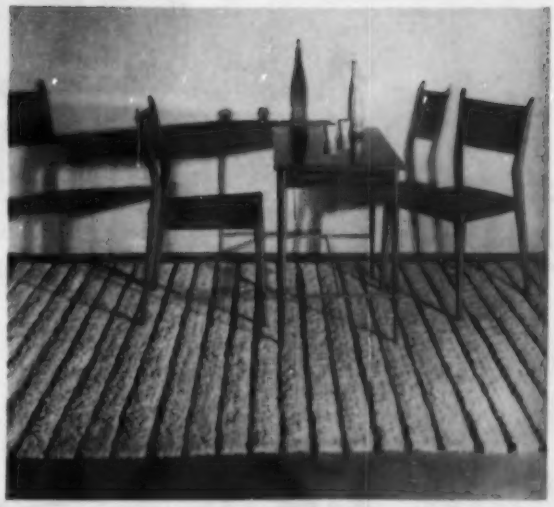
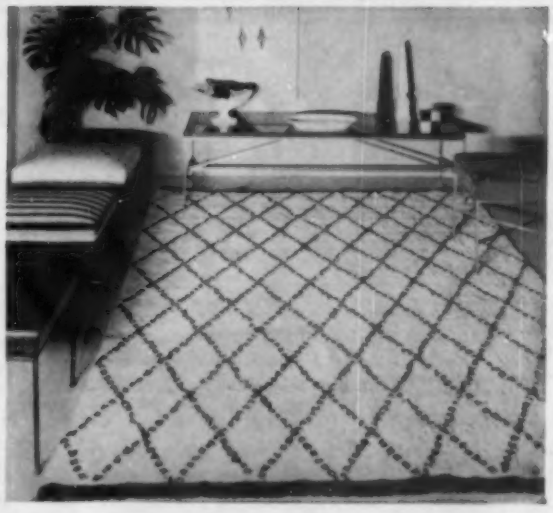
DETROIT 34, MICHIGAN

Glide-All Doors are available from distributors throughout the United States and Canada. For information write Plant nearest you.

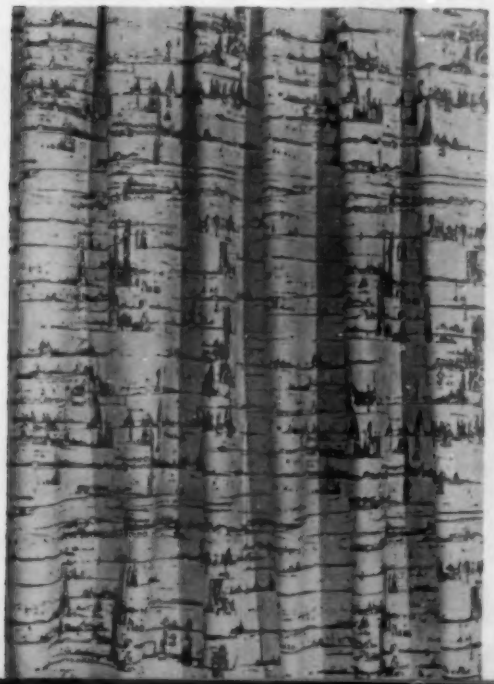
CHICAGO, Oakton St., Skokie, Illinois
CLEVELAND, Ohio, 1890 Carter Road
EL MONTE, Calif., 801 West Valley Boulevard
LAUREL, Miss., P. O. Box 673
NEW YORK, Glen Cove Rd., Mineola, N. Y.
SAN FRANCISCO, 1970 Carroll Ave.

Folding Door: "Shadowtone Bamboofold"/ patterned color on polished outer-core bamboo/ 18 color combinations/ cleanable surface, mildew- and warp-proof/ folds to less than 10% of extended width/ **retail:** $.84 sq ft/ **American Bamboo Corporation, 171-06 Jamaica Ave., Jamaica 32, N. Y.**

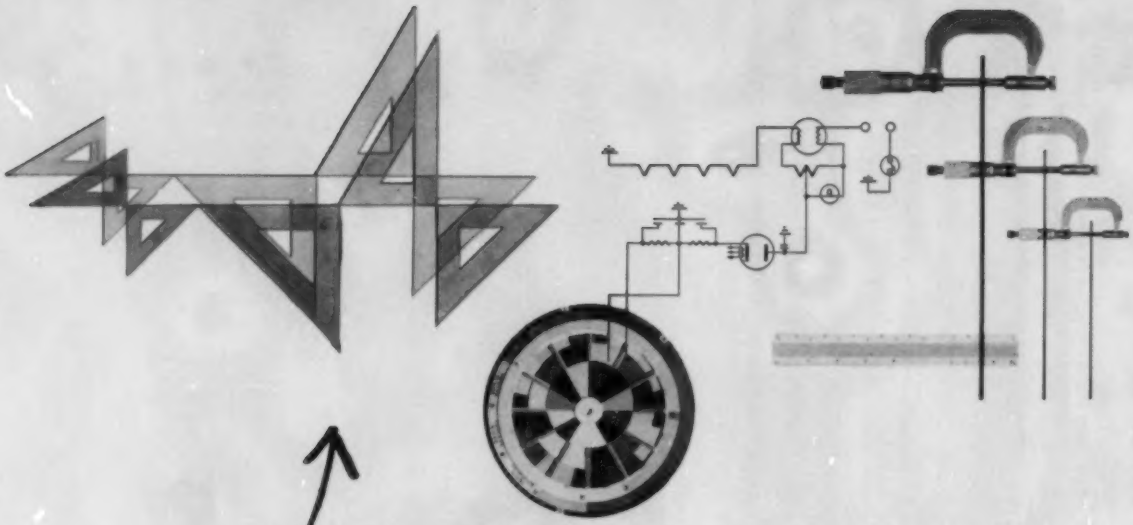




Screen Print: "Vista"/ abstract over-all design derived from original painting by Sara Provan/ seven color ways, including blues, greens, lavenders, pinks/ 48"/ **retail:** $6.90 per yd/ **Konwiser, Inc., 1 E. 53 St., New York, N. Y.**



Area Rugs: (top) "Deauville"/ horizontal stripe/ broad stripes in textured, clipped rayon pile, narrow stripes in cotton overstitching/ nine color combinations/ sizes from 2¼' x 4' to 9' x 12'/ **retail:** $12.95 to $149.50; (above) "Amara"/ diamond design formed by large overstitched dots on tufted background of textured, clipped rayon pile/ fringed ends/ nine color combinations/ sizes from 2¼' x 4' to 9' x 12'/ **retail:** $12.95 to $149.50/ **Needletuft Rug Mills, Division of Cabin Crafts, Inc., Dalton, Ga.**



ALL THIS

Every tile uniform in thickness: Colors matched by an electronically-controlled "color eye". Constant checking that makes every tile a straight-edged square. These are typical examples of the quality control that helps produce the 10 different tile products of the entire Kentile, Inc. line. All this . . .

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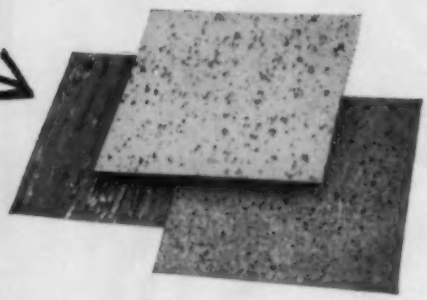

. . . as smart-looking, long-wearing and easy-to-maintain as modern know-how makes possible. In a word, there is a Kentile, Inc. product tough enough to . . .

TAKE THIS

Stand up under heavy traffic — resist grease, alkalies and other liquids — give long years of rugged service. These qualities combine to make Kentile, Inc. products the world's most popular line of resilient tile floorings.

KENTILE, INC.

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KENTILE: Asphalt Tile . . . Carnival . . . Corktone • KENCORK: Cork Tile for Floors and Walls • KENRUBBER: Rubber Tile • KENFLEX: Vinyl Asbestos Tile . . . Carnival . . . Corktone • ROYAL KENFLOR Vinyl Tile . . . CUSHION BACK KENFLOR Vinyl Tile . . . also available by the yard • SPECIAL KENTILE: Grease-proof Asphalt Tile • THEMETILE, KENSERTS: Decorative Inserts • KENCOVE: Vinyl Wall Base • KENBASE: Wall Base

Porcelain-on-Aluminum Tile: ceramic coating fired to aluminum base/ glass-hard finish, stainproof, chip-resistant/ may be safely scoured/ metal body will not fracture/ flexible for fitting/ tile not marred or warped by heat/ one square foot of tile and mastic weighs less than 18 oz/ in cove base, outside corner bead, bullnose butterfly shapes/ field tile in 4¼" x 4¼", 4¼" x 8½", 8½" x 8½" sizes/ trim tile in 2¼" x 8½", or ¾" x 8½" sizes/ colors are white, gray, charcoal, Delft Blue, Buttercup, coral, sandtone, cocoa, Spring Green, Sage Green, aqua, Dubonnet/ **Vikon Tile Corporation, Washington, N. J.**

Horizontal Room Conditioner: "Remotaire"/ provides individual room comfort control, conservation of space, simplified installation/ in three models, four capacities—200, 300, 400, and 600 cfm/ basic unit, Model H, intended for new construction to be built in to specially designed overhead enclosures/ other models include basic unit plus housing incorporating filter and inlet grill which encloses fan and motor assembly/ all models equipped with three-speed fan control switches in control box designed for flush wall mounting/ each unit has Fiberglas filter and full-length drain pan/ units connect by supply and return water piping system to central heating-cooling plant, provide seasonal heated or cooled air/ **Plumbing and Heating Division, American Radiator & Standard Sanitary Corp., Bessemer Bldg., Pittsburgh 22, Pa.**

Self-Healing Tackboard: "Livewall" tackboard/ washable vinyl plastic surfacing/ bonded to woven fabric backing/ fire-resistant and resistant to stain, cracking, chipping, mildew/ thumbtack punctures are self-healing/ in coral, gray, citron, natural, green, blue/ standard equipment for Moduwall Livewall instalations, or for mounting direct to wall in panels up to 4'x8'/ **Moduwall, Inc., 100 Kings Rd., Madison, N. J.**

Folding Curtains: "BemisWall"/ high density curtain, heavily coated with flame-proofing resin on jute/ formed into 7" panel folds, chain spaced to produce voluted effect/ supported by steel top plates, operates on nylon wheels in enclosed track/ for use as retractable partition or wall where noise control is required/ custom made for each application/ sound- and flame-resistant/ **Bemis Bro. Bag Co., 408 Pine St., St. Louis 2, Mo.**

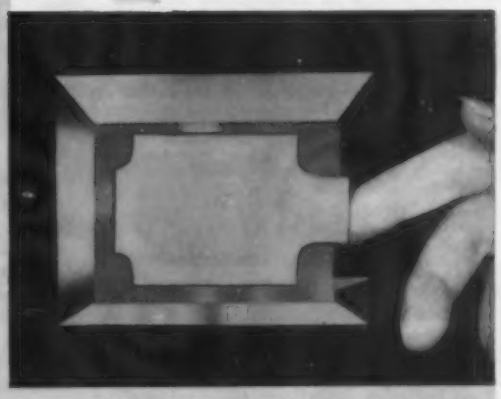
New Flooring Designs: "Azrock Terrazzo Tones"/ asphalt tile in color-chip mottling creating terrazzo-like effect/ in six color combinations and two natural cork tones/ 9"x9" size, ⅛" thick: "Azphlex Terrazzo Tones"/ vinylized greaseproof tile/ eight terrazzo-effect color combinations/ 9"x9" size, 3/32" thick/ **Uvalde Rock Asphalt Co., P.O. Box 531, San Antonio 6, Tex.**

Exposed Brick Effect Panels: Rigid vinyl sheet three-dimensional panels representing common brick, Roman brick, Adobe brick/ bricks stand out half-inch from background, with half-inch between each mortar joint/ 3x5-ft panels may be cut with saw, knife, shears/ may be applied over plaster, wallpaper, wallboard with waterproof cement or mastic with finishing nails/ panels may be painted for desired effect/ formed of Bakelite rigid vinyl sheet/ **retail:** $12.75 per panel or 85¢ per sq ft/ **Studio Brick, Inc., 8428 Melrose Pl., Hollywood 46, Calif.**

Weatherproof Plywood Panel: "Duraply"/ exterior grade firm plywood with permanently bonded overlay sheet of "Crezon"/ resin treated fiber to prevent checking, swelling, grain raising, increase moisture resistance/ weatherproofed for exterior application, may also be used as interior paneling/ two coats of standard paint cover surface/ in dimensioned panels of 4'x8', 4'x9', 4'x10', thicknesses 5/16", ⅜", ½", ⅝", and ¾"/ has same woodworking characteristics as regular plywood/ overlay sheet prevents edge splintering/ **United States Plywood Corp., 55 W. 44 St., New York 36, N. Y.**

GREAT SCOTT

what a wonderful new idea!



THE AMAZING

SOSS LEV-R LATCH

(eliminates old-fashioned door knobs)

A revolutionary new concept in Door Hardware

NEW MODERN DESIGN

Now! For the very first time, here's a door latch with flush, smooth, streamlined surfaces that are in keeping with modern architecture. It has no knobs to damage walls—a feature which eliminates the need for door stops.

AVAILABLE WITH OR WITHOUT LOCKING MECHANISM FOR ALL INTERIOR DOORS!

Low in Cost—High in Quality

NEW EASE OF INSTALLATION

To install a Soss Lev-R-Latch all that's necessary is to bore two holes and insert four screws. This can be done so easily and so quickly that labor costs are cut as much as ½.

Soss Lev-R-Latch is a fitting companion to the world-famous Soss Invisible Hinge, *"The Hinge That Hides Itself."*

NEW EASE OF OPERATION

With the Soss Lev-R-Latch you open a door with but a flick of a finger. There's no more pesky knob that's either too tight or too loose, or is forever punching holes in the wall.

MECHANICAL AND DESIGN PATENTS PENDING

The Soss Hinge has no protruding hinge butt. It's completely hidden from view when doors or lids are closed. Use it whenever you build or remodel.

SOSS Manufacturing Company
P. O. Box 38, Harper Station
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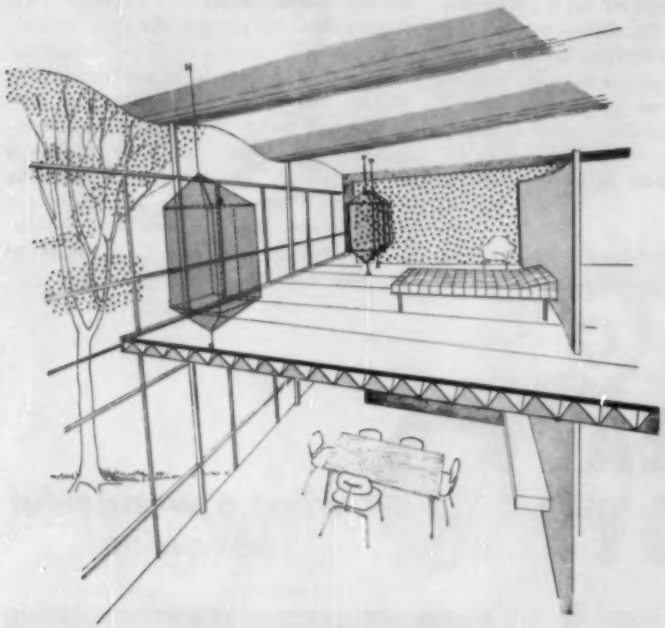
p/a manufacturers' literature



Results of a year's research on plastic building materials, conducted at MIT and sponsored by Monsanto Chemical Company, have recently been published in a booklet, Plastics in Housing. *Since one of the major objections to plastics has been their misapplication, this report aims to explain the architect's criteria for evaluating and selecting building materials and equipment. The essential elements of structure are separately discussed—foundation and structure, walls and roof, flooring, openings, mechanical elements, furnishings, etc.—and in each chapter requirements for materials are outlined and current uses of plastics are briefly evaluated.*

Several potential uses for plastics are also suggested, including the prefabrication of large parts (left). Here, ideas already partially developed are further explored, such as the use of flexible, movable partitions, as well as a ceiling-floor fabrication incorporating structure, air-conditioning plenum, and lighting. A curved roof of plastic-impregnated honeycomb core allows the utilization of low elastic-modulus material; large glass areas could be made practical for cold climates by inserting an electrically heated, metallized, butyral sheet between double-glazed sash. In the last chapter, experiments made on acoustically insulated panels and molded, modular bathroom units are described.

The booklet is available from Monsanto Chemical Company, Plastics Division, Springfield 2, Mass. $2† L.G.

Editors' Note: Items starred are particularly ★ *noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.*

air and temperature control

1-48. Acme Flow-Cold Cooling Towers (403), 8-p.
1-49. Acme Hot-Dip Galvanized Cooling Towers (700), 8-p.

Two bulletins describing all-metal cooling towers which recirculate condenser cooling water for greater economy. Drawings illustrate features of construction; chart gives data on savings in water and cost. Both booklets contain step-by-step procedure for selection of cooling tower—first one for units up to 3800-cfm capacity, second one for large installations requiring up to 70 tons. Acme Industries, Inc., Jackson, Mich.

1-50. Anemostat Selection Manual, AIA 30-J (50), 68-p. guide containing information on selection of aspirating-type air diffusers. Outlines procedure for design and installation of diffuser system; provides data on radius of diffusion, sound levels, static pressure, and performance. Also covers selection of diffusers for high-velocity air-conditioning systems. Description, dimensions, and performance chart for each model; drawings, specifications. Anemostat Corp. of America, 10 E. 39 St., New York 16, N. Y.

1-51. Chicago Induced-Draft Fans (SI-101), 8-p. brochure giving data on packaged fan unit. Describes construction of fan designed to eliminate tall, expensive stacks yet provide constant boiler draft regardless of weather conditions. Provides selection table, dimensions, and installation details; specifications. Chicago Blower Corp., 9867 Pacific Ave., Franklin Park., Ill.

1-52. Connor Kno-Draft High-Pressure Air Diffusers (K33), 52-p. manual compiled to provide up-to-date information on design of high-pressure air-transmission systems. Discusses design procedure, single- and dual-duct systems, air velocity, and duct contruction; describes high-pressure diffusers in detail, including selection tables, dimensions, and specifications for each model. Photos, layout drawings. Connor Engineering Corp., Danbury, Conn.

1-53. Compak Water-Tube Boiler, 8-p. publication outlining features of firebox-type water-tube boilers for high- or low-pressure installations. Describes all parts of packaged boiler including induced-draft fan; also provides performance charts. International Boiler Works Co., 307 Fern St., E. Stroudsburg, Pa.

construction

2-66. Barrett Reference Manual, AIA 12-B (55), 56-p. catalog on roofing materials. Drawings and specifications explain application of built-up roofing on flat or pitched surfaces; details show installation of flashing, drainage systems, and waterproofing. Also contains directions for insulating roofs. Tabular index gives quick description of roofing materials. Barrett Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

2-67. Electroforged Steel Grating and Treads (2486), 16-p. booklet giving data on welded-steel and interlocked-aluminum gratings. Dimensioned drawings show several grating designs; tables give allowable loads. Also explains use of serrated and twisted bars for additional traction. Grating Dept., Blaw-Knox Co., P. O. Box 1198, Pittsburgh 38, Pa.

2-68. Trussed-Tee Subpurlins, 4-p. folder presenting lightweight subpurlins for use with poured-in-place or precast roof systems. Isometric drawings illustrate installation of subpurlins; tables give dimensions of subpurlins and total safe loads. Specifications. Blue Diamond Co., 2722 Logan St., Dallas 15, Tex.

2-69. Butler Buildings for the Dairy Farmer (1348), 52-p. guide containing recommendations for planning prefab-steel dairy buildings. Discusses selection of site, layout of dairy area, and planning of individual units. Tables give design data; details show special farm constructions. Photos, typical plans. Butler Mfg. Co., Kansas City, Mo.

2-70. Enduring Porcelain Metals, 8-p. brochure on hollow and honeycomb-core porcelain-enamel panels. Drawings show panels used as spandrel covering or exterior surfacing material; details explain erection of panels, joint treatment, and window insertions. Architectural Div., California Metal Enameling Co., 6904 E. Slauson Ave., Los Angeles 22, Calif.

2-71. Curtain Walls, 16-p.
2-72. Commercial Aluminum Windows, 40-p.
2-73. Alumi-Coustic Grid System, 8-p.

Three brochures detailing aluminum building products. First booklet illustrates curtain-wall system with photos, elevations, and details of recent noteworthy installations. Second booklet contains large-size, two-color details of commerical windows; drawings, dimensions, and specifications are given for double-hung, projected, or ribbon windows. Third one provides data on exposed-grid suspension system for acoustical ceilings. Specifications are included as well as suggestions for arrangement of lighting and ceiling tiles. Cupples

Products Corp., 2650 S. Hanley Rd., St. Louis 17, Mo.

2-74. Stran-Steel Structural Systems, AIA 13-G, 20-p. booklet describing all-steel structural system. Gives complete technical data for design of nailable framing members, bearing members, and galvanized roof decking; includes typical design example, details, and design tables. Photos, specifications. Stran-Steel Div., Great Lakes Steel Corp., Ecorse, Detroit 29, Mich.

2-75. Nelson Stud Anchors for Concrete, 14-p.

2-76. The Curtain-Wall Story, AIA 17-A, 22-p.

Two pamphlets containing information on use of stud welding in construction. First one provides data on welding of concrete anchors. Gives properties and dimensions of steel stud anchors; shows details of anchors used at expansion joints, door frame, and curbs. Second one describes erection of metal curtain walls with stud welding. Lists types of wall panels suitable for welding; provides drawings showing placement of studs. Nelson Stud Welding Div., Gregory Industries, Inc., Lorain, Ohio.

2-77. Lapidus Cavity-Wall Blocks, 4-p. folder featuring concrete block invented by Architect Morris Lapidus. Describes masonry unit with integral cavity which eliminates need for exterior or interior wall treatments; gives details, physical properties, and cost comparison with familiar types of construction. Lapidus Block Corp., 9031 Ft. Hamilton Pky., Brooklyn 9, N. Y.

2-78. Mills Metal Partitions, AIA 35-H-6 (55-T), 20-p. bulletin showing steel partitions for toilets, showers, and hospital compartments. Gives description, specifications, and suggested layouts for several different types of partitions; includes sample color chips and description of surface finishes. Drawings. Mills Metal Compartment Co., 965 Wayside Rd., Cleveland, Ohio.

2-79. Sanymetal Toilet Compartments, AIA 35-H-6 (92), 28-p. catalog illustrating steel compartments. Gives specifications, construction details, and drawings for several types of toilet compartments; describes features of vitreous-porcelain and synthetic-enamel finishes. Also contains data on hospital cubicles. Color chart; description of hardware. The Sanymetal Products Co., Inc., 1701 Urbana Rd., Cleveland 12, Ohio.

2-80. How to Use Novoply, AIA 23-L (55), 20-p. booklet explaining characteristics of pressed, masticated wood panels. Lists physical properties, gives recommendations for installation of panels, including details of edge treatment, joints, and fastening devices. Also illustrates use of material for sliding doors, partitions, furniture, and wall paneling. Photos, instructions for finishing. United States Plywood Corp., 55 W. 44 St., New York 36, N. Y.

2-81. Van Huffel Welded Tubing, 36-p. catalog of square, rectangular, and specially shaped welded-steel tubing. Presents physical properties and elements of sections in tabular form; also includes data on tolerances, radii of corners, and bending. Van Huffel Tube Corp., Warren, Ohio.

2-82. Packaged Masonry Chimney, AIA 5-H (RS-1), 8-p. publication presenting prefab masonry chimney suitable for new or existing buildings. Provides technical data on lightweight chimney which can be suspended from floor joists or supported on piers; contains details, specifications, and installation instructions. Van-Packer Corp., Bettendorf, Iowa.

2-83. Wooster Safety Treads and Thresholds, AIA 14-D-1, 12-p. brochure giving data on abrasive-surfaced stair treads and thresholds. Describes grooved or flat-surface types; also provides information on nosings for worn steps. Drawings, dimensions. Wooster Products, Inc., Wooster, Ohio.

doors and windows

3-46. Acme Sliding Door Hardware, AIA 27-A, 12-p. brochure on hardware for sliding doors and windows. Details illustrate by-passing doors as well as recessed doors; drawings show installation with rubber or nylon guides. Also contains information on line of packaged sliding-door frames. Specifications, dimensions. Acme Appliance Mfg. Co., 35 S. Raymond Ave., Pasadena 1, Calif.

3-47. Fleetlite Aluminum Windows, AIA 16-E, 12-p. publication describing line of double-glazed windows. Describes construction features of preassembled units; shows operation of double-hung and sliding windows. Specifications, dimensions, details. Fleet of America, Inc., 515 New Walden Ave., Buffalo 25, N. Y.

3-48. Grant Sliding Door Hardware, 58p. loose-leaf notebook containing information on line of hardware for sliding doors. Includes material on equipment for very-thin plywood, accordion-folding, and heavy-duty doors; describes operation of sheave-and-track hardware. Cut-away photos show installation of hardware; technical data, drawings, specifications. Grant Pulley and Hardware Corp., 31-85 Whitestone Pky., Flushing 54, N. Y.

3-49. Kawneer Entrances, AIA 16-A (55), 16-p. booklet showing narrow-stile, aluminum-framed entrances. Drawings and dimensioned details illustrate both stock units and special doors; sketches show contemporary-style hardware. Also contains data on wide-stile door frames. Photos, specifications. The Kawneer Co., Niles, Mich.

3-50. Slide-View Sliding Glass Doors and Windows, AIA 16-E, portfolio enclosing three brochures and 39 detail sheets on steel sliding windows. Booklets give suggested installation details for several types of construction as well as specifications, dimensions, and photos. Detail sheets present additional data on sliding-transom units and double-glazed sash. Slide-View Steel Door and Window Co., 521 N. La Cienega Blvd., Los Angeles 48, Calif.

3-51. Wascolite Airdome, Hatchway, 4-p.

3-52. Wacolite Pyrovent, Pyrodome, 4-p.

Two folders giving information on dual-purpose plastic skylights. First circular provides data on combination skylight-ventilator and skylight-hatchway; includes photos, details, and specifications. Second folder describes aluminum fire vent as well as special skylight which acts as vent in case of fire. Wasco Products Inc., 87 Fawcett St., Cambridge 38, Mass.

electrical equipment, lighting

4-32. Engineered Incandescent Lighting, AIA 31-F-2 (255), 60-p. catalog featuring precision-engineered lenses for incandescent fixtures. Illustrates several different units with clear, prismatic lens, in-

(Continued on page 161)

PROGRESSIVE ARCHITECTURE, 430 Park Avenue, New York 22, N. Y.

I should like a copy of each piece of Manufacturers' Literature circled.
We request students to send their inquiries directly to the manufacturers.

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1-51	2-73	2-83	4-34	7-16
1-52	2-74	3-46	4-35	7-17
1-53	2-75	3-47	4-36	7-18
2-66	2-76	3-48	4-37	8-12
2-67	2-77	3-49	4-38	8-13
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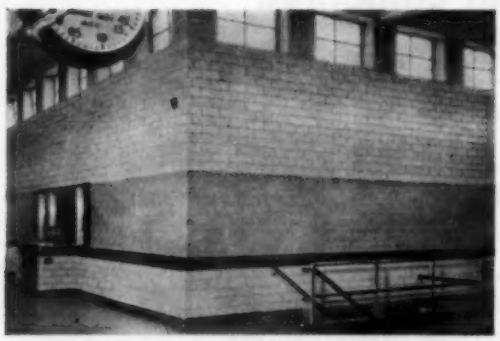
Keep employee morale high... keep plant maintenance low...

with walls of STRUCTURAL CLAY FACING TILE



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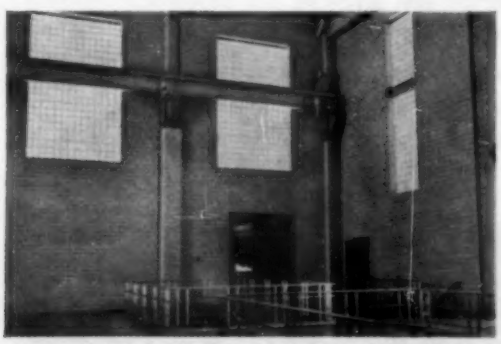

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Canton 1, Ohio

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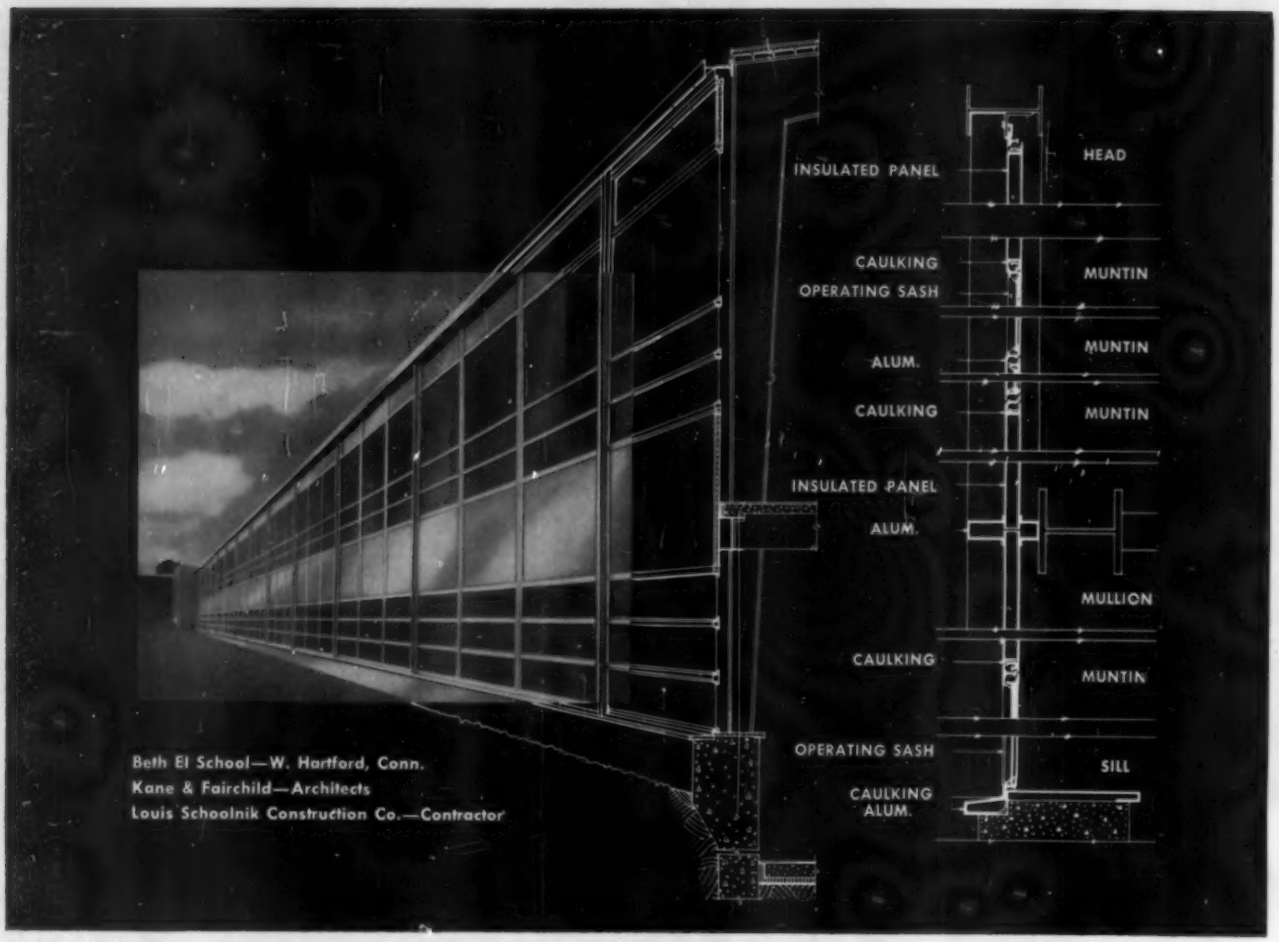

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cluding fixture designed for installation in acoustical-tiled ceiling; also presents information on fixtures with egg-crate louvers, concentric metal louvers, and recessed reflectors. Gives specifications, dimensions, and performance charts for each unit; provides data on design of lighting system. The Art Metal Co., Cleveland 3, Ohio.

4-33. Stage Lighting Facilities for the School and Community Theater, 8-p. pamphlet containing recommendations on stage lighting equipment. Outlines equipment needed for well-equipped theater; lists facilities required for smaller, elementary-school auditorium. Describes functions of control board and several types of lamps. Century Lighting, Inc., 521 W. 43 St., New York 36, N. Y.

4-34. General Purpose Control Catalog (GEC/1260A), 68-p. catalog on line of general-purpose control devices. Contains data on motor starters, relays, solenoids, and switches; compares merits of manual *v.* magnetic control as well as across-the-line *v.* reduced-voltage control. Performance tables; drawings and typical schematic connections. General Purpose Control Dept., General Electric Co., Schenectady 5, N. Y.

4-35. Lighting for Industry, AIA 31-F-2, 112-p. handbook covering industrial-lighting requirements. Explains basic engineering principles and economics of lighting; gives data for solution of specific industrial-lighting problems, covering both indoor and outdoor installations. Photos, typical layout drawings. Holophane Co., Inc., 342 Madison Ave., New York 17, N. Y.

4-36. Designed Lighting, AIA 31-F-2, folder containing 12 data sheets illustrating line of lighting fixtures. Includes information on recessed, surface-mounted, and hung fixtures; gives description of wall-mounted strip lighting; provides data on louvers and translucent diffusers. Drawings, dimensions, performance charts. Marlou Lights, Inc., Fanwood, N. J.

★ **4-37. Wakefield Lighting: As Flexible As Your Classrooms,** AIA 31-F 44-p. report prepared by Darell Boyd Harmon and Associates on the effect of vision on learning. Reviews activities taking place in modern classroom; gives recommendations for installation of lighting systems as flexible as classrooms. Also shows how existing schoolrooms can be rehabilitated with proper lighting. Photos, drawings. The Wakefield Co., Vermilion, Ohio.

4-38. Electric Heating for Homes, 36-p. guide presenting fundamental data for design of electric-heating installations. Includes information on determining heat requirements, selecting heating units, and providing adequate wiring; gives step-by-step instructions for design of system, providing sample problem. Design tables, wiring diagrams. Westinghouse Electric Corp., Emeryville 8, Calif.

insulation (thermal, acoustical)

6-14. Sound Absorption Coefficients of Architectural Acoutical Materials, AIA 39-B (XV), 36-p. index of acoustical products. Summary tables provide data on thickness, noise-reduction coefficients, light reflectance, and flame resistance of materials identified by trade names; manufacturers' tables give more detailed information on each product. Includes diagrams showing recommended methods of mounting acoustical materials; also contains coefficients of other building materials. Acoustical Materials Assn., 59 E. 55 St., New York 22, N. Y.†

6-15. Insulrock, AIA 37-B-1 12-p. booklet describing characteristics and applications of cement-coated, wood-fiber panels of high insulation value. Shows use as roof decking with steel- or wood-framed structures; also discusses use as nonbearing, fireproof partitions, furring, and concrete forming. Tables show safe transverse loads, noise-reduction coefficients, and thermal conductivity. Insulrock Corp., E. Linden Ave., Linden, N. J.

(Continued from page 157)

(Continued on page 162)

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For three generations, leading architects and builders have learned to rely on Pecora Products. These days, the specifications for many of America's most important buildings read: "Pecora Calking and Glazing Compounds"

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PECORA PAINT CO., INC.
Sedgley Ave. & Venango St. Philadelphia 40, Pa.

p/a manufacturers' literature

(Continued from page 161)

6-16. 85% Magnesia Insulation Manual (2nd Ed.), 84-p. technical manual giving information on magnesia and asbestos-fiber heat insulation. Discusses physical properties of material along with new data on conductivity, density, and fire resistance; contains detailed information on application of material. Appendix provides tables for design of proper insulation. The Magnesia Insulation Manufacturers Assn., 1317 F St., N. W., Washington 4, D. C.

6-17. Sound-Insulating Double Partitions, AIA 20-B-1 (13), 4-p. pamphlet on insulating value of double partitions. Complete specifications provide description of methods of erecting partitions; tables give additional data on partition height, stud spacing, and sound-transmission loss; details show installation of door bucks, stiffeners, and stud anchors. Metal Lath Manufacturers Assn., Engineers Bldg., Cleveland 14, Ohio.

another *New* HAWS FOUNTAIN!

a product of modern styling

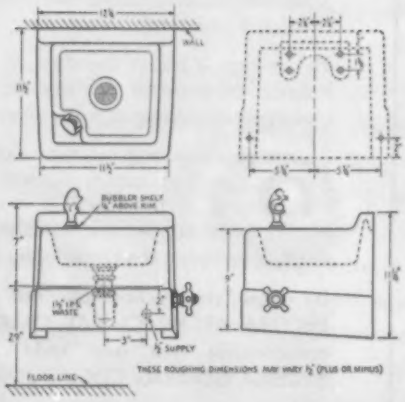
Model No. 7X

Acid resisting enamel cast iron drinking fountain

***Designed by* CHANNING WALLACE GILSON**
Industrial Designer

FOR PERFECT ADAPTATION to current architectural trends . . . and constructed of durable acid-resisting enameled cast iron to withstand the severest abuses of the school yard, this new HAWS drinking fountain assures lasting trouble-free service.

HAWS Model No. 7X drinking fountain contains HAWS *complete sanitation* features . . . with raised, shielded, angle-stream fountain head of chromium plated brass. Water pressure and volume is automatically controlled . . . it's anti-squirt!



WRITE TODAY for full details of HAWS Model No. 7X . . . a complement to new construction . . . a vast improvement for modernization! *It's designed to meet ALL city, county and state material and operational sanitation requirements.* Specify HAWS with confidence!

HAWS DRINKING FAUCET CO.

1443 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA

sanitation, plumbing, water supply

7-15. Haas Frost-Proof Closets (55), 20-p. catalog on line of automatic-pressure tanks, frost-proof yard hydrants, and frost-proof water closets. Gives dimensioned diagrams, drawings, and description of each fixture; contains information on accessories and valves. The Philip Haas Co., Dayton 2, Ohio.

7-16. Milvaco Bronze Valves (B255), 8-p. circular containing condensed data for selection of valves. Tabulates description, size, and weights of valves for plumbing and heating; gives data on manifold units, foot valves, and strainers. Drawings. Milwaukee Valve Co., 2375 S. Burrell St., Milwaukee 7, Wis.

7-17. Ruud Commercial Water Heaters (RS-100A), 8-p. pamphlet containing recommendations for selecting water heaters. Gives tables and step-by-step procedure for selection of unit; describes advantages of each type of heater. Photos, dimensions, specifications. Ruud Mfg. Co., Kalamazoo 24F, Mich.

7-18. Zurn Hydrants, AIA 29-D-9 (54-5), 16-p. catalog of nonfreezing hydrants. Presents exploded drawings showing ground and wall-type hydrants; gives description, dimensions, and specifications. Plumbing Div., J. A. Zurn Mfg. Co., Erie, Pa.

specialized equipment

8-12. Elkay Lustertone Sinks, AIA 29-H-6, 66-p. notebook illustrating line of stainless-steel sinks and counter tops. Gives drawings and dimensions of all stock models; describes one-piece sink and counter top for custom-cabinet installations. Also contains data on stainless-steel sinks for restaurants. Elkay Mfg. Co., 1874 S. 54 Ave., Chicago 50, Ill.

8-13. Stainless-Steel Sinks and Drainboards, AIA 29-H (4), 36-p. catalog showing line of steel sinks. Provides photos and dimensions of units designed for wide variety of commercial requirements; gives data on planning of restaurant counter surfaces. Also includes information on custom made counter tops for residential installations. Zeigler-Harris & Co., 2900 San Fernando Rd., Burbank, Calif.

interior furnishings

11-10. Brunswick School Furniture, 48-p. catalog of school furniture and equipment of contemporary design. Photos show complete line of desks, tables, and storage units; sketches give suggested classroom layouts. Describes construction of furniture; back-cover pocket contains specifications for each item. School Equipment Div., The Brunswick-Balke-Collender Co., 623 S. Wabash Ave., Chicago 5, Ill.

11-11. Sico System of Table Seating, AIA 35-C (55), 8-p. pamphlet describing folding tables with attached seating. Drawings and photos illustrate several models with bench-type seating; also shows folding table designed for use with chairs. Sico Mfg. Co., Inc., 6045 Pillsbury Ave., S., Minneapolis 19, Minn.

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absolutely flame-proof

latest development of L. E. Carpenter & Co.

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VICRTEX V.E.F.* FABRICS

Yes! You asked for it! You architects working with hospitals, schools, institutions. You wanted an attractive utility fabric — with all the durable qualities provided by our famous V.E.F.* process. And V.E.F. DADO-WALL gives you even more than you ever hoped for!

DADO-WALL won't yellow or discolor; is abrasive-resistant; won't shrink at the seams. And because of the famous V.E.F.* *fusing* process (not a laminated coating) it will never chip, crack or peel. The antiqued, smooth surface is as handsome as its performance. In 14 rich colors, V.E.F. DADO-WALL is the super-answer to your needs for a wallcovering that can withstand the day-in, day-out punishment of heavy traffic and always keep up a fresh appearance!

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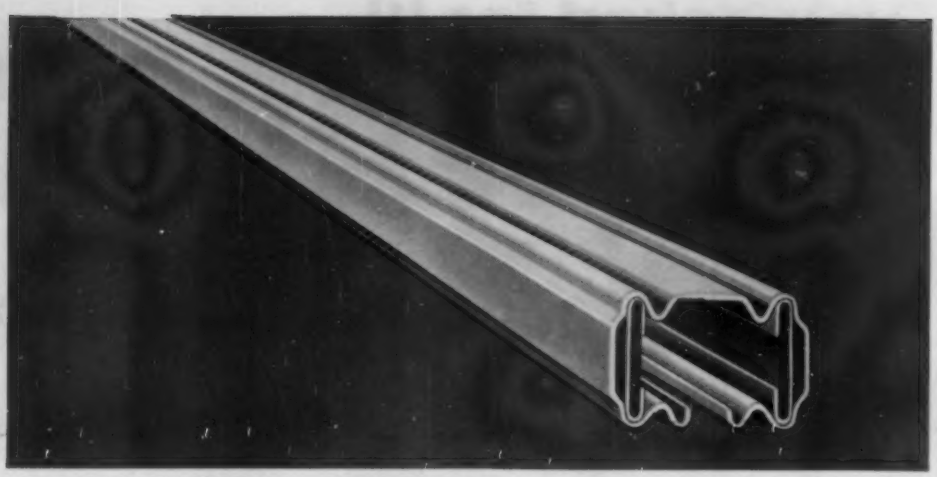

IT'S A CONTINUOUS OUTLET. Cutaway view shows how copper bus bars run the entire length of Universal Trol-E-Duct, making it every inch an outlet. Moving trolleys that roll effortlessly on steel wheels are also available to bring mobility to small power tools.

BULLDOG UNIVERSAL TROL-E-DUCT

Feeds Lights Supports Them, too!

PROVIDES COMPLETE MOBILITY WITHOUT DOWNTIME OR REWIRING

No need to plan to suspend lights separately. Sturdy Universal Trol-E-Duct®—the *original* bus bar system for lights and small power tools—supports lights in addition to supplying *flexible* power to operate them.

Movable weight supports make it easy to position fixtures where they are needed. Twistout Plugs tap power anywhere along the duct. Lights can be arranged, changed, added or removed as desired—without rewiring, power shutoff or downtime. Your clients save on over-all costs . . . get a safer, more efficient system.

Investigate the double utility, double value of BullDog Universal Trol-E-Duct. Consult your BullDog Field Engineer or Qualified Distributor for all the facts. Or, write: BullDog Electric Products Co., Detroit 32, Mich.

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ELECTRIC PRODUCTS COMPANY

A Division of I-T-E Circuit Breaker Company

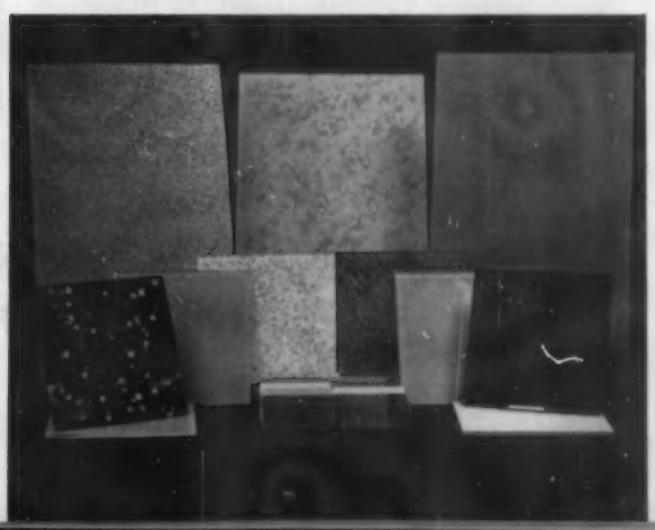
Export Division: 13 East 40th Street, New York 16, New York. ***In Canada:*** BullDog Electric Products Company (Canada), Ltd., 80 Clayson Road, Toronto 15, Ontario.

Marble floor and wall tiles—cut only ½" thick and weighing but 7½ lb per sq ft—are now available at prices competitive with other fine tiles. Suitable for schools, hospitals, churches, public buildings, small commercial buildings, and homes, Markwa tiles can be set over painted-plaster walls, plywood, cement or concrete floors and walls with adhesive (as above), *and over any uniform concrete, masonry, cinder-block, or similar construction with mortar. Can be specified in any one of 18 marbles and are fabricated in three sizes: 8" x 8", 8" x 12", and 12" x 12". Vermont Marble Company, Proctor, Vt.*

Tests sponsored by the Metal Roof Deck Technical Institute have established the need for fire retardant vapor seals over metal decks. One new successfully tested fire retardant vapor seal now being distributed by Lexsuco, Inc., of Cleveland, is made of B. F. Goodrich nonflammable Koroseal plastic. Tests have shown that the Koroseal vapor barrier does not ignite or contribute materially to flames in any way. At the Dickenson Elementary School, Mt. Clemens, Michigan, this new vapor seal was installed for the first time over Fenestra acoustical panels (below) *which serve as roof deck, joists, and finished acoustical ceiling. Detroit Steel Products Company, 3209 Griffin St., Detroit 11, Mich.*

Owens-Corning has announced a new residential building insulation which is claimed to be the first mineral wood insulation to use genuine aluminum foil on both sides (above). *The outer or breather side—which is perforated to avoid any build up of moisture in the Fiberglas—provides a reflective surface which turns back hot summer heat; the foil on the other side makes a highly effective vapor barrier. This product is produced in both batts and roll blankets and can be used with studs spaced 16", 20", 24" on centers. Batts are 4' long and the blankets come in lengths up to 60'. Owens-Corning Fiberglas Corporation, Toledo 1, Ohio.*

Spandrelite—a new facing material for buildings (below)*—has been designed primarily to meet demands for colorful spandrels on glass-clad buildings. Unlimited color range can be obtained and the heat-strengthening process which fuses ceramic color to plate glass gives the product a far greater shock resistance than ordinary plate glass of the same thickness. In addition to custom colors, eight standard colors will be provided in a choice of polished plate glass or twill textures in opaque finishes. The color side will be mounted to the interior. Spandrelite is framed by Pittco Metal in aluminum, stainless steel, or bronze and in a choice of finishes. Pittsburgh Plate Glass Company, Pittsburgh 22, Pa.*



Architects: **Gregg and Briggs, Peoria;**
General Contractor: **Fred Harbers' Sons, Peoria.**

RESIDENCE WING OF NEW YMCA HAS 7 STORIES OF OPEN-WEB JOISTS

This handsome new YMCA building in Peoria, Ill., is one of the most up-to-date in the country. Of modern design, with large areas of glass, the new "Y" contains lounges, club and game rooms, complete gymnasium and pool facilities, handball courts, special-purpose rooms and a comfortable chapel. All facilities are adequately separated as to age groups.

Restaurant, men's lounge and living quarters for young men are in the seven-story residence wing. Here the architects used Bethlehem Open-Web Steel Joists for floor and roof construction.

The advantages of using these open-web joists were many. The joists were delivered to the job site tagged and ready for placing with no delays to the construction schedule. They required only field welding to secure them in place, and to provide rigid, permanent construction. Pipe and conduits were run right through the open webs, and installation of recessed lighting fixtures was simplified.

In addition to these constructional advantages, the use of Bethlehem Open-Web Steel Joists gives added fire-safety to the entire structure.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM OPEN-WEB STEEL JOISTS

BETHLEHEM STEEL

...and again it's **Brasco** Store Fronts and Entrances

at the new

SOUTHGATE SHOPPING CENTER

MAPLE HEIGHTS, OHIO

37 Stores in Operation
14 More in Planning Stage
40 Additional Projected

★

Architects and Engineers
Sidney H. Morris and Associates, Chicago

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Developed by
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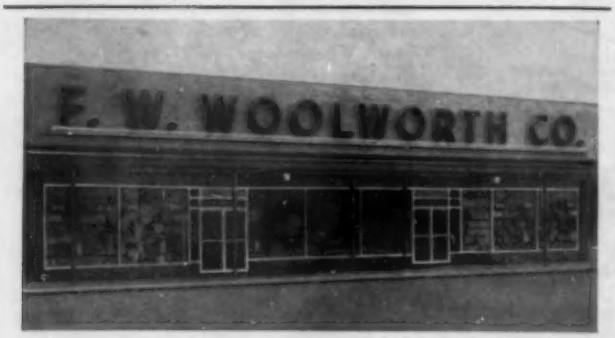
Entrance, J. C. Penney Co.



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p/a products

(Continued from page 165)

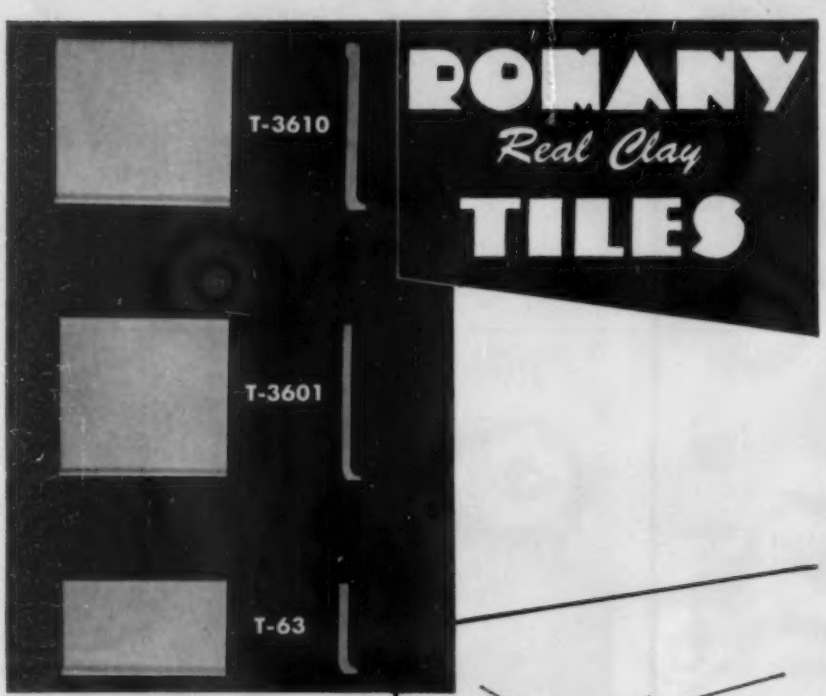
air and temperature control

SC-Series Steam Generators: new line of generators has been developed to reduce installation and maintenance costs for industrial plants. Economy is gained by pre-engineering generator design as well as standardizing dimensions, structural details, and controls; individual plant requirements are met by wide range in steam capacities (from 50,000 to 150,000 lb per hr), maximum working pressures, and steam temperatures. Generators also allow choice between balanced-draft or pressurized operation with oil or gas firing. Foster Wheeler Corp., 165 Broadway, New York 6, N. Y.

Kilbury Floor-Flo Recessed Heater: new gas heater, designed for residential installations, features modulated heat flow at floor level. Perfection of modulating gas controls permits dependable regulation of heat flow; temperature-change element at base of heater eliminates floor chill. Fan-type heater measuring 57" high x 20" wide, is less than 11" deep; unit has capacity of 50,000 Btu. Kilbury Mfg. Co., Inc., 14529 Hawthorne Blvd., Lawndale, Calif.

Air-O$_3$ Fresh Falcon Ozonator: heavy-duty ozonator prevents mold, bacteria, and odor in food-storage areas. Four specially designed generating grids diffuse controlled concentrations of ozone into freezers and storage areas; low-current density method of diffusing ozone (eliminating harmful oxides of nitrogen) is completely safe for humans. Unit plugs into conventional a-c outlet. Melco Sales, Inc., 305 Fifth Ave., S., Minneapolis 15, Minn.

"Starfire" Boiler: new oil-burning boiler for residential installations features vertical flue travel with vertical smoke hood to permit close-to-wall placement and lower chimney height. Other advantages are greater prime-heating surface, foil-faced, glass-wool insulation, and slow-flow baffle action. Unit is suitable for use as packaged unit with burner, standard specialties, and tankless hot-water heater, as boiler without burner, and as boiler-burner unit for steam or hot-water systems. Boiler measures 20" wide by 48" high. Utica Radiator Corp., Utica, N. Y.



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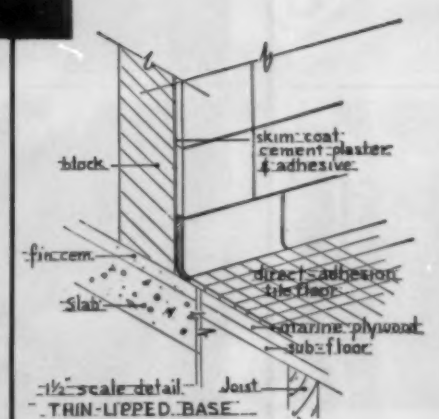
THIN LIPPED BASES

Available in three sizes and in all ROMANY Buff Body Colors shown in Sweet's. T-3610 is a 6"x5½" sanitary round top base. T-3601 6"x5⅝" and T-63 6"x3⅜" are for use with a Ceramic tile wainscot. All these bases are designed for use with Ceramic Floors installed with adhesive and composition floors such as Linoleum, Asphalt, Rubber and Cork. The use of these pieces eliminates necessity for having sub floors of different levels.



Every Architect should have our Sample Tile Chart No. 15. It's free.

UNITED STATES CERAMIC TILE COMPANY

Member: Tile Council of America and Producers' Council, Inc.
217-G FOURTH ST., N.E., CANTON 2, OHIO

construction

Weldwood Movable Partitions: wood-paneled partitions with mineral-core construction are easily erected and moved. Metal connectors hold panels firmly in place; wiring facilities are concealed in base, post, and cornice. Hardwood-veneer finishes, in wide selection of woods, create pleasant office atmosphere and mineral core provides effective sound-transmission barrier. Manufactured in widths of 24" to 48", up to 8' long, 1¾" thick. U. S. Plywood Corp., Weldwood Bldg., 55 W. 44 St., New York 36, N. Y.

"Visqueen" Film for Winter Construction: polyethlyene film enables construction work to continue during cold weather. Thin, moisture-resistant sheeting stretched over openings protects materials and workmen against wind, rain, or cold; translucent material allows passage of light and solar heat. When outer walls are completed, sheeting is stapled to wood frames and fastened over window openings until glass is installed. Film, .004" thick, comes in 100' rolls, 13' wide, and is said to compare favorably in price with kraft paper. The Visking Corp., P. O. Box 1410, Terre Haute, Ind.

doors and windows

Andersen Self-Storing Combination Window: combined storm window and screen is being made in sizes to fit most modular double-hung windows. Wood frame 1½" thick, gives strength; aluminum mullions permit narrow lines for pleasing exterior appearance. Two storm panels and screen slide smoothly on plastic track; all panels are easily removed for cleaning. Andersen Corp., Bayport, Minn.

Modern-Vent Solar Shades: large-size louvers, designed for vertical or horizontal installation, shield large window areas from sun. Aluminum louvers with honey-

(Continued on page 172)

No. 3
OF A SERIES

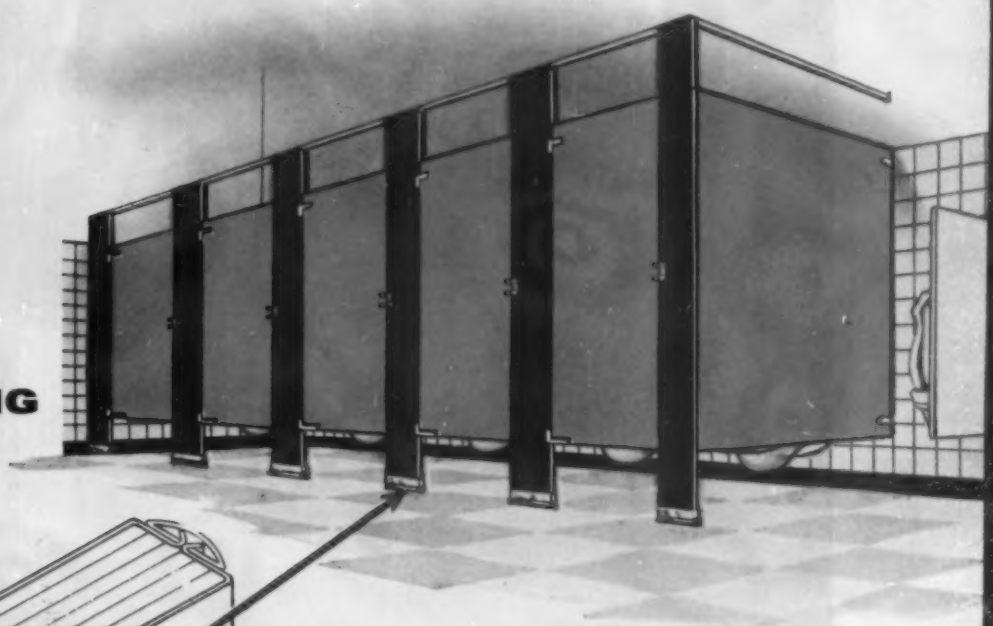
WHAT TO LOOK FOR IN QUALITY TOILET COMPARTMENT CONSTRUCTION

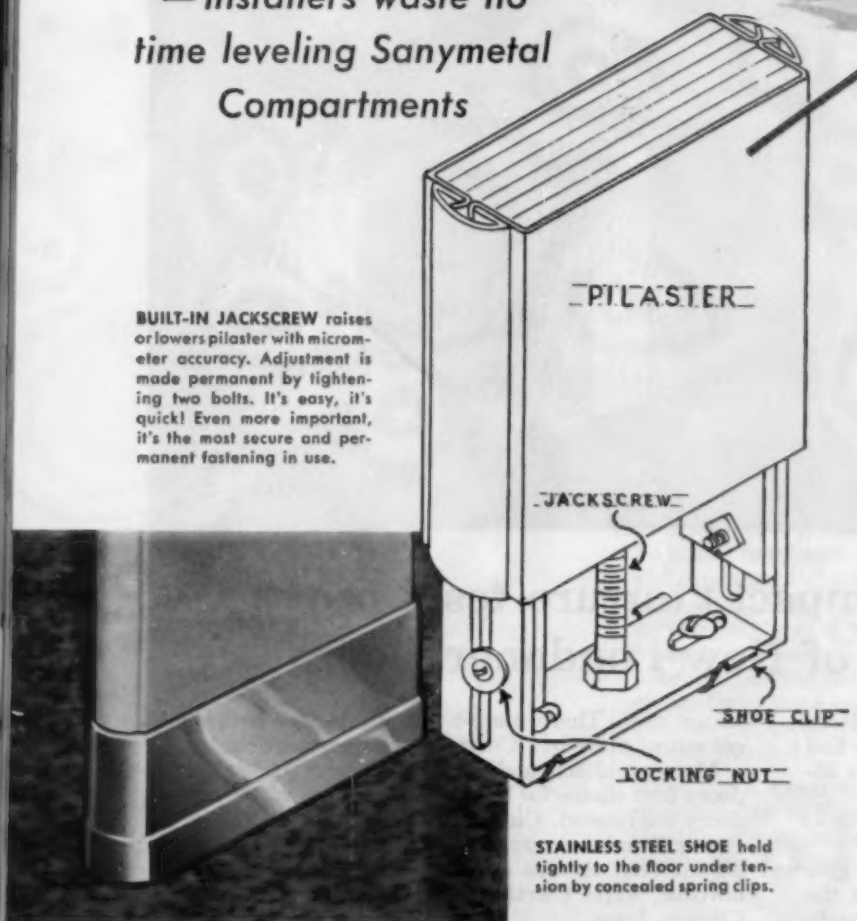
One of many major differences that give you your money's worth in satisfactory service!

Built-in Jackscrew

FOR QUICK, PERMANENT LEVELING

— installers waste no time leveling Sanymetal Compartments





BUILT-IN JACKSCREW raises or lowers pilaster with micrometer accuracy. Adjustment is made permanent by tightening two bolts. It's easy, it's quick! Even more important, it's the most secure and permanent fastening in use.

STAINLESS STEEL SHOE held tightly to the floor under tension by concealed spring clips.

MANY quality construction features found in Sanymetal Toilet Compartments mean long service and extra economy. These features result from Sanymetal's 41 years' experience in manufacturing compartments. Be sure you get this quality.

A feature you should note is the jackscrew support built-into pilaster floor connections of Sanymetal Academy Compartments. By adjusting the jackscrew, the installer quickly moves the pilaster up or down, leveling the whole front. Locking nuts secure the level position permanently. This quick adjustment saves field labor. The permanently adjusted jackscrew carries the weight of the compartment to the floor; permanent position does not depend on bolts or screw connections which can slip.

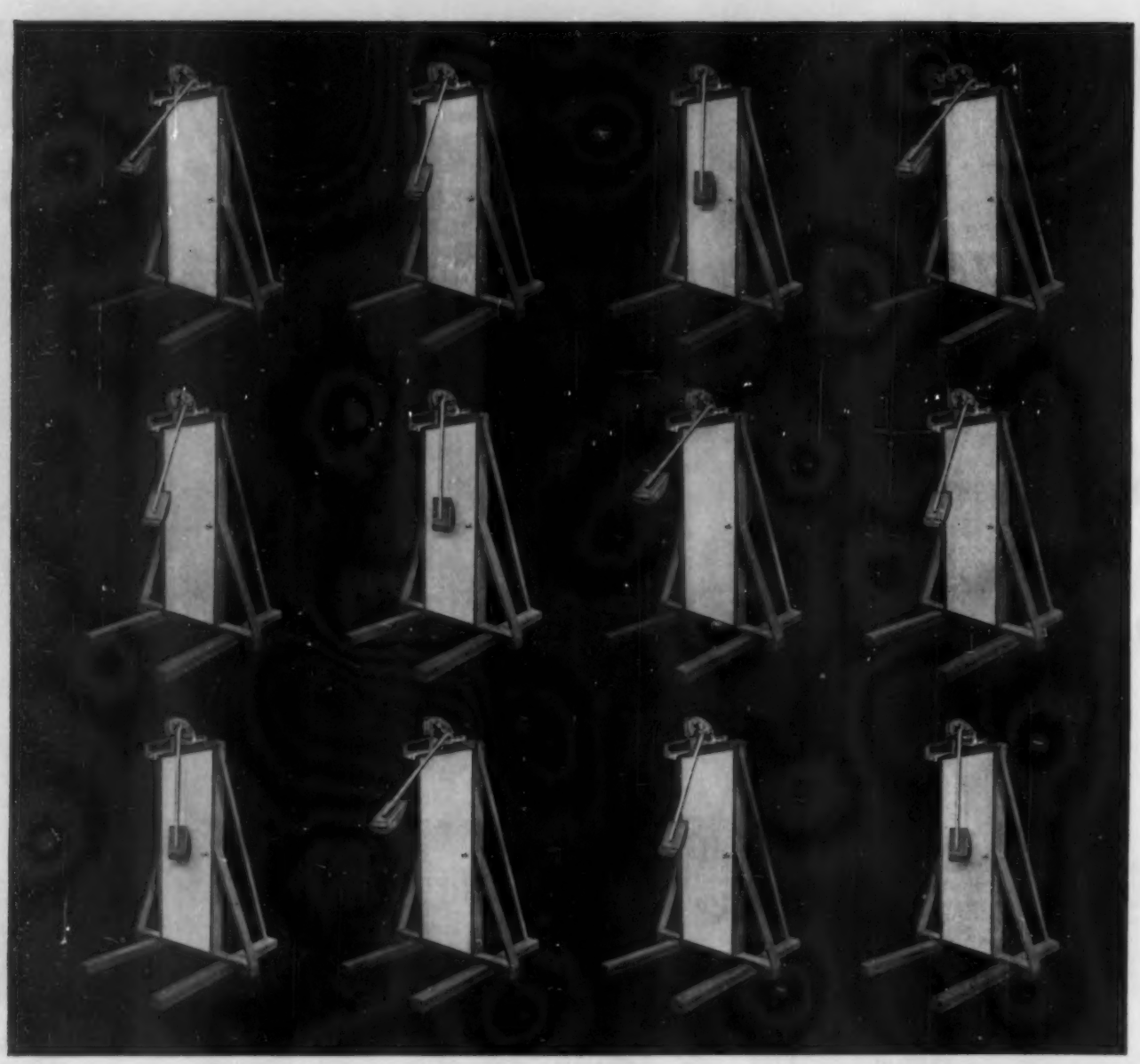
This unique Sanymetal feature is one of many which make Sanymetal products leaders. Only Sanymetal offers all these features without extra cost. Ask your Sanymetal Representative to point out all features of Sanymetal quality construction.

See Sweet's or send for Catalog 92, describing all Sanymetal Compartments. If you wish, we will mail other advertisements of this series on quality construction details.

Note description of Simm's Building, page 104

This long-life feature is **STANDARD** *at no extra cost on Sanymetal Academy Compartments.*

THE Sanymetal® PRODUCTS COMPANY, INC.
1693 URBANA ROAD, CLEVELAND 12, OHIO



529,879 bangs in impact "torture test" prove superior stamina of New Londoner Doors

How much abuse can a Curtis New Londoner hollow-core flush door stand? Curtis engineers wanted to find out. So they rigged up a pendulum which banged a 35-lb. weight against the door 38 times per minute.

After 529,879 bangs—when the engineers gave up—the door was still good as new!

Curtis New Londoner hollow-core flush doors give lifetime service because they are *all wood*—with the grid core locked into the frame to form one completely joined unit. There are no floating parts—nothing to get out of place in a Curtis New Londoner door.

Many architects and builders consider these superior doors first choice for homes, schools and wherever fine doors are needed. Curtis New Londoner doors and all Curtis Woodwork are sold by retail lumber and building-material dealers everywhere. For complete information, write Curtis Companies Service Bureau, Clinton, Iowa.

CURTIS NEW LONDONER HOLLOW-CORE FLUSH DOORS

CURTIS WOODWORK

Heart of the Home

3325 WILSHIRE BUILDING, *Los Angeles, California*
OWNER AND BUILDER: *Tishman Realty and Construction Co., Inc. New York and Los Angeles*
ARCHITECT: *Victor Gruen, A.I.A., Los Angeles, New York and Detroit*

serving the architect, and owner-builder
with metal wall engineering and production quality

This new 13-story office building will be completely air-conditioned. To admit maximum natural light without the discomfort of glare and direct sunlight, the building has been designed with projecting horizontal sunshades on the south and north elevation, and vertical louvers on the east and west elevation. The complete aluminum wall framing and vertical louvers will be Kawneer engineered and produced, saving the architect and builder months of time and giving them the assurance of client satisfaction. Special Kawneer weather-tightness plus expansion and contraction features will be included.

Have you a metal wall problem? Why not delegate the whole responsibility to Kawneer. Five plants in the United States and Canada, a complete engineering staff, and 50 years of experience in architectural metals are waiting to serve you.

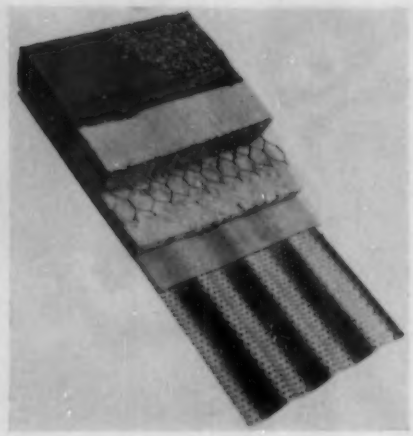
Write for folder describing Kawneer services and metal wall jobs.

Kawneer
General Offices
NILES, MICHIGAN
ARCHITECTURAL PRODUCTS DIVISION

(Continued from page 168)

comb core provide excellent weather resistance and high reflective qualities; glass-fiber louvers have air-foil shape with dead-air space inside to act as insulator. Both types have counter-balanced hardware permitting adjustment for any sun condition from inside building. Superior Window Co., 5300 N. W. 37 Ave., Miami, Fla.

Series T-500 Tubular Aluminum Windows: window frames of heavy tubular sections make larger expanses of glass possible. Fabricated of specially tempered aluminum alloy having strength of 28,000 psi, sections are ⅛″ thick and 1-13/16″ deep; windows are inside glazed with heavy bead to accommodate ⅛″ to ¾″ glass. Hardware is forged aluminum; two-point weather-stripping, which slides into grooves in extruded sections, cannot loosen. Dept. PA, Valley Metal Products Co., Plainwell, Mich.



500 Million years—Young...

natural slate

Slate is ageless. Slate's natural resistance to chemicals, its non-absorptive qualities, and tensile strength have broadened its utilization to practically all laboratory sinks, tops, furniture, and equipment. Since slate is available in pieces up to 7′ in length, jointing is eliminated in most instances, making it perfect for many installations.

Slate . indispensable in the laboratory, has also proven itself the standard for chalkboards, window sills, stalls, floors and decorative trim.

Further information available on specific properties and tests of natural slate. Be safe. Install slate.

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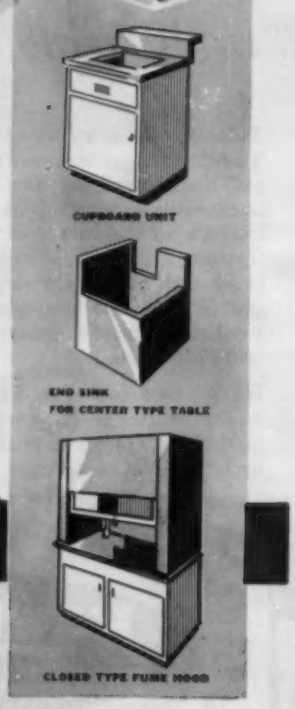

insulation (thermal, acoustical)

"Structur-Acoustic" Roof System: low-cost acoustical roof system is less than 5″ in depth. Corrugated, galvanized-steel sheets act as support for roofing material; perforated sheets and glass-fiber acoustical bats (separated by phenolic mat) provide effective acoustical ceiling. Used with 2½″ lightweight, insulating-concrete slab, system provides noise-reduction coefficient of .65 and U factor of .14; entire assembly weighs less than 8 psf but will carry 130 psf on 6½′ span. Granco Steel Products Co., 6506 N. Broadway, St. Louis 15, Mo.

"Microlite" Acoustical Baffle: lightweight, wedge-shaped acoustical baffle is claimed to reduce reflected noise up to 60 percent. Designed for noisy industrial areas, baffle is also ideal for auditoriums, rinks, and bowling alleys. Made of glass fibers bonded with thermosetting resin, baffle comes foil-faced for high light reflectivity or in plain finish for maximum economy; units can be hung low to trap noise near floor or at ceiling height to catch reflected sounds. Baffle 2′ high x 3′ long x 6″ deep weighs one lb. Libbey-Owens-Ford Glass Co., 552 T Wayne Bldg., Toledo, Ohio.

specialized equipment

Radi-O-Com: combination interphone and music communication system is designed for home use. System consists of master unit, three remote-speaker panels, and front-door speaker panel; all parts contain microphones as well as speakers for two-way conversation. Parts are surface mounted in existing homes and placed between studs in new construction; power consumption of entire unit is 30 w. Trans-Tel Corp., 736 N. Highland Ave., Hollywood 38, Calif.

surfacing materials

Aluminum Roofing Shingle: lightweight, fireproof, rustproof roof is possible with aluminum shingles. Four-way lock keeps roofing in place, gives water-tight seal, and prevents uplift by high winds. Shingles, finished in baked-enamel colors, are also claimed to reduce temperature under roof by 25 percent. Loomroof Corp. of America, P. O. Box 9536, Pittsburgh 23, Pa.

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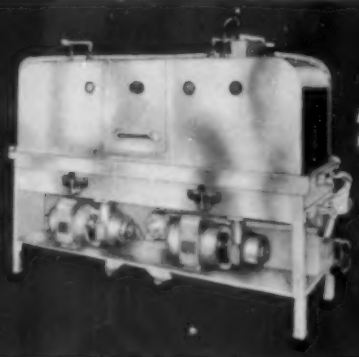

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Many more modern housing-units to cost less by using *permanently beautiful* concrete masonry!

Economy alone would not account for the marked trend toward Vibrapac Block. Added to many other advantages, however, the economy factor carries a lot of weight with everyone aiming at good building practice. True structural economy involves not only *initial cost* but also years of *minimum maintenance costs*. The "bonuses" of concrete masonry are many! ★

"What profiteth a man to build his house upon the sands" of economy, only to face excessive maintenance-costs later? Security against deterioration is all-important.

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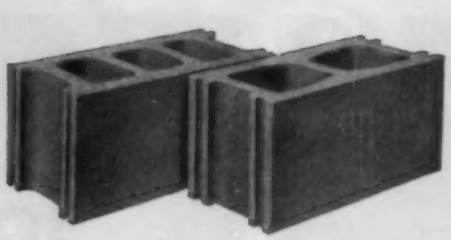
Whether plans call for a single family home, or a multiple dwelling structure, concrete masonry is practical.



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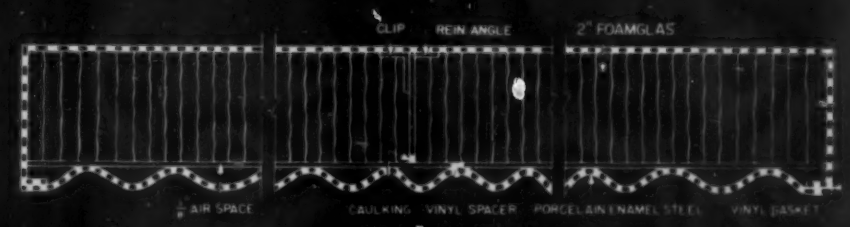

Architect: Vincent G. Kling, A.I.A., Philadelphia, Pa. • Consultant: I. M. Pei, New York, N.Y. • General Contractor: Turner Construction Co., New York, N.Y. • Panel Manufacturer: Ingram-Richardson Mfg. Co., Beaver Falls, Pa. • Roofer: Wm. F. Kulzer Co., Philadelphia, Pa.

The architect, members of his staff and RCA's representative check progress at the job site during erection of the five Cherry Hill buildings. The owner and the architect report: "We overcame design problems plaguing grid-panel pioneers by insulating the porcelain enamel panels with 2" FOAMGLAS.

Unique porcelain enamel-cellular glass sandwich developed for RCA's Cherry Hill curtain walls

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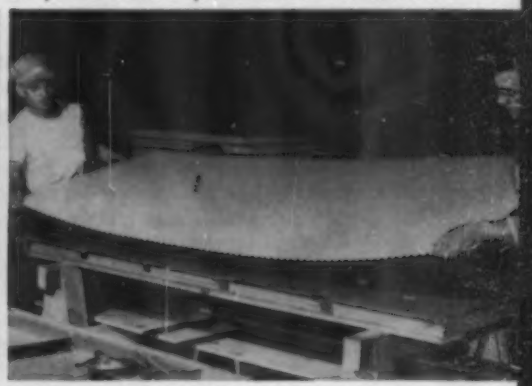

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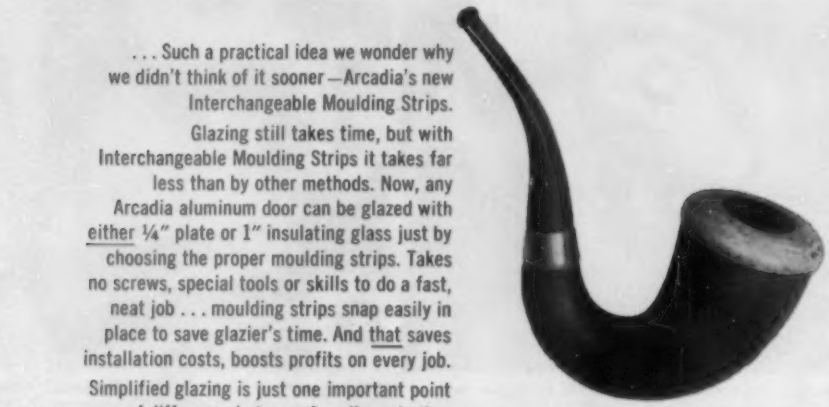

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GEORGE DE MASIREVICH, Architect, 140 N. La Brea Ave., Los Angeles 36, Calif.

PROJECT ARCHITECTS, Suite 1007, 3460 Wilshire Blvd., Los Angeles 5, Calif.

MAX FOLEY, Architect-Engineer, 101 Park Ave., New York 17, N. Y.

TERRELL R. HARPER and HARRIS A. KEMP associated as HARPER & KEMP, 710-712 Thomas Building, Dallas 2, Tex.

LOUIS DEMOLL has become a Partner of BALLINGER Co., Architects-Engineers, 121 North Broad St., Philadelphia, Pa.

new associates

HUBERT L. JONES and CHARLES E. WILKERSON have become Associates of J. PINFORD WALFORD & O. PENDLETON WRIGHT, Architects, Richmond, Va.

PHILIP M. GRENNAN has been made an Associate of ALFRED EASTON POOR, Architects, 787 Fifth Ave., New York 22, N. Y.

GEORGE F. KLEIN, JR., is now associated with HAMMEL & GREEN, Architects, 186 North Fairview Ave., St. Paul, Minn.

WILLIAM S. KIRKPATRICK and JOHN M. SCHALLER have been appointed Associates of MUHLENBERG BROS., Wyomissing, Pa.

CHARLES BENNETT, previously Director of Planning, Los Angeles, has become an Associate of PEREIRA & LUCKMAN, 9220 Sunset Blvd., Los Angeles, Calif.

ROGER E. MCMULLIN, JAMES P. SAMPSON, and NATHANIEL W. SAMPLE have been made Associates of WEILLER & STRANG & ASSOCIATES, 114 N. Carroll St., Madison 3, Wis.

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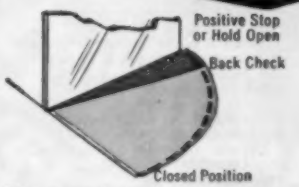

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Impact of cities

The Metropolis in Modern Life. *Edited by Robert Moore Fisher. Columbia University Bicentennial Conference Series. Doubleday & Company, Inc., 575 Madison Ave., New York, N.Y., 1955. 401 pp., $6*

The fact of the rapid and continuously progressing urbanization during the last 150 years in Western civilization is probably historically and sociologically of greater importance for the development of mankind than all scientific discoveries and technical inventions during the same period. Of course, this process of urbanization is inseparably connected with and conditioned by these very discoveries and inventions and their technical application. Human society and the individual human being, their reactions to the surrounding world, their emotional attitudes, their patterns of behavior, their relations to each other, last (but not least) their spiritual concepts, have been changed so decidedly by the intensification of metropolitan life, that mankind today certainly differs more from men around the 1700's than the latter did from their medieval predecessors. The orbit of this development becomes apparent if one realizes that in the United States today more than 60 per cent of the population lives in cities of more than 100,000 population.

Thus, the first of five conferences held in connection with Columbia University's Bicentennial was devoted to one of the basic problems of today, the "Metropolis in Modern Life." Papers and discussions of this conference have been edited by Robert Moore Fisher. Even a brief glance at the contents shows the variety of problems dealt with, from the political to the social, from the technological to the spiritual approach. No technical advice or useful hints for the solution of their specific tasks are given to the architect and city planner, but something much more important: the basic aspects under which their respective individual problems have to be handled. If special chapters are dedicated to the influence of science and technology upon the metropolis and, on the other hand, to the influ-

(Continued on page 184)

books received

Urban Land Problems and Policies, Bulletin 7. International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N.Y., 1953. 182 pp., illus., $1.75

Simplified Design of Structural Steel. Second (Professional) Edition. Harry Parker. John Wiley & Sons., Inc., 440 Fourth Ave., New York 16, N. Y. 244 pp. illus., $5.75

The Pelican History of Art. Edited by Nikolaus Pevsner. Volume Z9. Sculpture in Britain: The Middle Ages. Lawrence Stone. Penguin Books, Inc., 3300 Clipper Mill Rd., Baltimore 11, Md., 1955. 297 pp. illus., $8.50

Marketing Handbook for the Prefabricated Housing Industry (Research Pubn. No. 2). Glenn H. Beyer and James W. Partner. Cornell University Housing Research Center, Ithaca, N.Y., 1955

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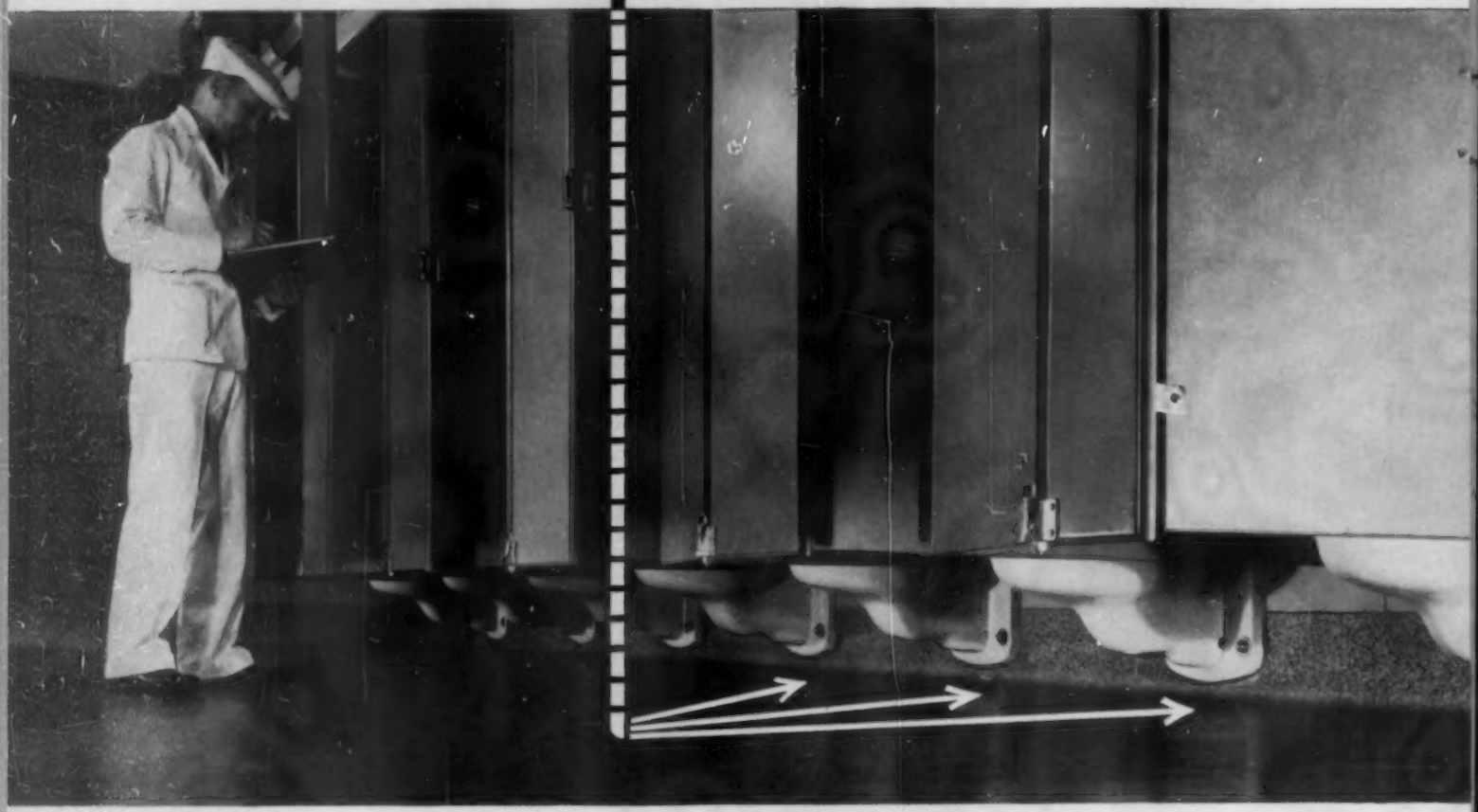

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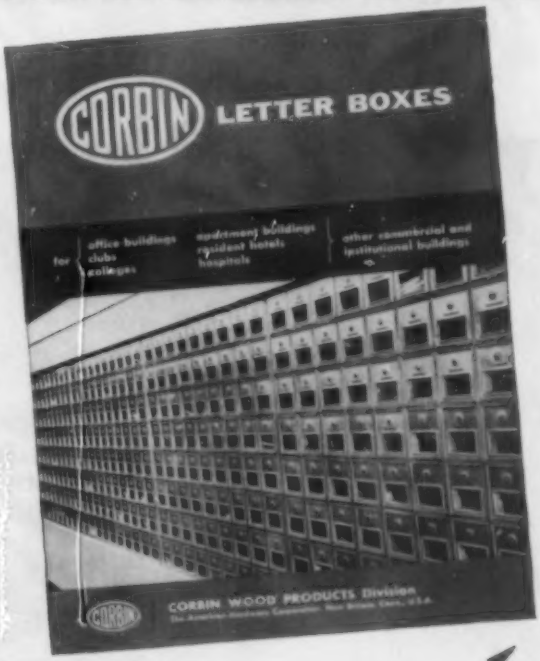

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   Architect: Altenhof & Bown
   Structural Engineer: George Levinson
   Electrical Engineer: Carl Long
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   Architect: California State Dept. of Public Works, Division of Architecture
   Contractor: George A. Fuller Co.
   Header Duct: National Electric Products Corp.
5. General Telephone Co., Santa Monica, California
   Architect: Albert C. Martin & Assoc.
   Contractor: George A. Fuller Co.
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Investigate Electrifloor now for your next building. To utilize all its advantages, you should design the building around it. Fenestra's nationwide sales organization is ready to assist you. Write Detroit Steel Products Co., Dept. PA-9, 3409 Griffin Street, Detroit 11, Mich.

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†®

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3.

Exclusive Features of ELECTRIFLOOR

- Flat plate design allows 4" handholes in header ducts for easiest access to wire-carrying cells.
- Capacity of cells is 2½ to 3 times greater than most other cellular floors, protecting against dangerous crowding of wires.
- Flat, smooth surface saves concrete fill and provides utmost economy in preparation for the finished floor.
- Any depth Electrifloor panel can be designed as a lateral diaphragm for resistance to wind, bomb shock and seismic loads.
- Greater strength with lighter dead weight gives unusual structural design economy.

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MATERIAL IS
adaptable

A wide range of sizes, surfaces, densities and thicknesses makes Homasote the universal material for both displays and permanent construction of many types

In the egg-crate construction here pictured, sheets of Homasote are cut half-way through and interlocked—without nails. This exhibit has the strength for heavy loads.

If you require a board that really has size, Homasote is available in Big Sheets up to 8′ x 14′—in two different thicknesses. If you have uses for boards with interesting surfaces, Homasote—in all sizes and seven thicknesses—has a fine "linen" surface. In 2′ x 8′ planks, it also has beveled edges. In the 2′ x 8′ size and in other panels—8′ long and 16″, 32″ or 48″ wide—you also have the choice of a *striated*, light- and sound-deflecting surface or a varied width *wood-textured* surface.

If curved surfaces are in your design, Homasote—in any of its three surfaces—can be curved on an 18″ radius—solely by wetting. With steam and molds, it can be curved to a 4″ radius.

Let us send you samples and specification literature on Homasote in all its forms. Kindly address your inquiry to Department J-10.

SEE OUR CATALOG IN SWEET'S

HOMASOTE COMPANY

TRENTON 3, NEW JERSEY

reviews

(Continued from page 178)

ence of the metropolis upon political institutions and the law, upon the professions, upon the spiritual life of man, etc. —we begin to understand that the impact of the city upon civilization cannot be overestimated and that there is no segment of modern life which would not be molded by it. Leading authorities in their fields, among them many architects and city planners, proved by their papers or by their contributions to the general discussion that Frank Lloyd Wright's condemnation of cities as the symbol of absolute Evil is an untenable oversimplification. From any viewpoint, Good balances Evil in metropolitan life. The equalizing influence of anonymity is balanced by the possibility of utmost individualization; the depressing accumulation of masses, by the immediacy of human communication; the superficiality of a mere physical togetherness, by the stimulation of variety of human contacts.

Sociological and psychological analyses explain the deeper meaning and consequences of specific problems such as slum clearance, interurban traffic, connection between working and living quarters, between recreation facilities and community life, between adult education and public health, between unions and management, between downtown centralization and the flight to the suburbs. In other words, every architect and city planner who wants to achieve more by his work than mere practical and esthetically satisfactory solutions for specific tasks, who ponders about the basic philosophy of his doing and who tries to find out what makes a city really great, will find plenty of material in these analyses of the aspects of urban life. It may help him to reform and beautify one of the greatest creations of man in history: the city eternal.

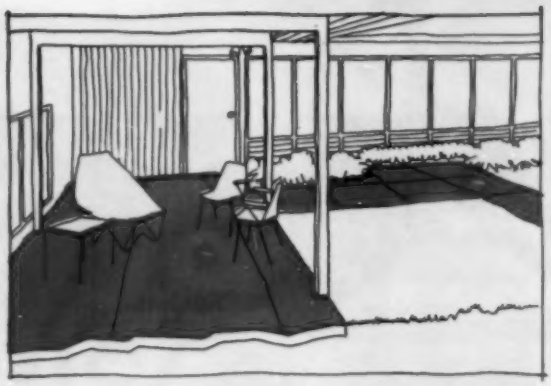
PAUL ZUCKER

world of past values

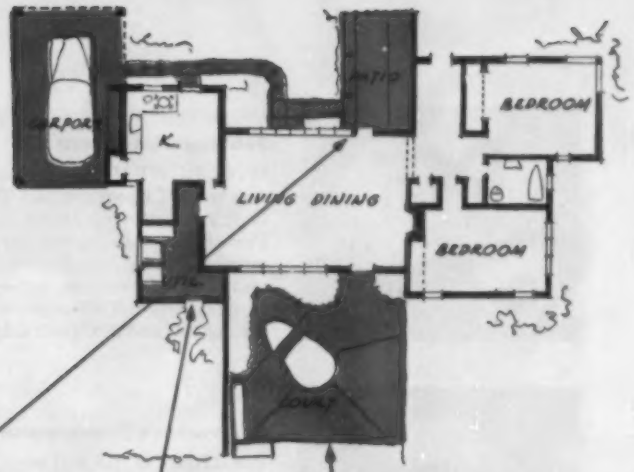
A Theory of Architecture. *Victor Hammer. Wittenborn, Schultz, Inc., 38 E. 57 St., New York 22, N.Y., 1952. 95 pp., $4.80*

Victor Hammer is one of the many thoughtful and sensitive people brought

(Continued on page 189)



Fused color. *Not a paint or coating! Colorundum is troweled into the concrete topping and becomes an integral part of the surface, producing beauty and durability.*



Nat'l Homes Corp. photo

J. Shulman photo

E. Braun photo

Beautify concrete floors

Colorundum floors give luxury appearance and extra wear resistance at low cost

Here's a simple and economical solution to the problem of exposed or uncarpeted areas of drab, colorless concrete. It's called Colorundum. And the fused-color concrete floor it provides lends a dramatic and practical accent to patios, walkways, and service floors. Colorundum cuts air conditioning costs, too, because its color properties keep sunlit areas substantially cooler than ordinary concrete. Yet its cost is just a fraction of that of tile floors.

Colorundum is far more resistant to traffic than ordinary concrete floors. It is a balanced formulation of nonslip aggregate (next to the diamond in hardness), water-repellent compounds, and durable colors . . . contains no silica, quartz, or sand. It is easy to keep clean, and since it contains no metal, it will not rust or stain.

Colorundum is available in eleven decorator colors.

Subsidiary of Chemical Corp.

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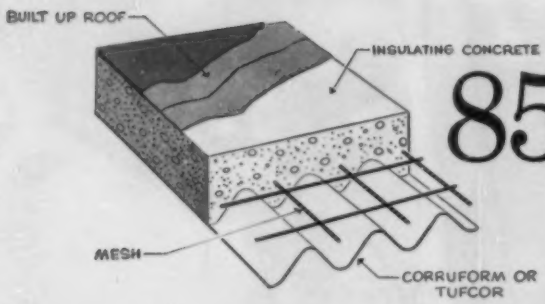
Job Superintendent

W. C. BOWEN says, "Roofing time was really important and Tufcor kept work moving ahead smoothly. Pre-sizing made it easy for two-man crews to place 7 to 8,000 sq. ft. a day, and pouring was fast, too—28,000 sq. ft. in one day. Tufcor gave us a strong roof and a safe working platform."

Contractor's Representative

WARREN O. LAMB says, "Speed and economy are two big advantages of Tufcor. Roofing proceeded on schedule and we saved the cost of shoring, too. That meant savings in time and labor costs."



85,000 sq. ft. fire-blankets

Nashville architects and builders provide fire protection for owners and tenants, thousands of dollars in insurance savings.

An 85,000 sq. ft. roof of Granco Tufcor and Corruform with lightweight insulating concrete greatly increases the fire safety of the new Green Hills Village Center, a two-story multi-shop facility which will serve over 5,000 Tennessee families in the suburban area about 6 miles southwest of Nashville, Tenn.

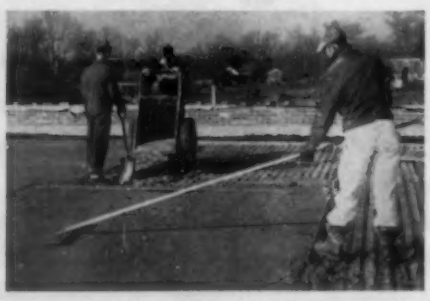
Because of its fire-resistant qualities, the Tufcor-based roof serves as a positive check against the spread of fire via the roof should it break out in any one of the center's several stores.

The speedily constructed Tufcor roof follows closely the design of Granco's Tufcor roof which performed so sensationally well in an ASTM E119-50 fire test in 1954. In that 45 minute test, at temperatures up to 1720° (F.), the Tufcor roof didn't burn, didn't feed the flames, and didn't fall. After the test, the roof was still able to carry the full design live load.

Warren O. Lamb, Vice President of W. C. Holt and Sons, general contractors on the Green Hills job, says, "Tufcor is a great time and money saving way to build a fire-safe roof. All you do is open a bundle of Tufcor sheets, place and secure them to the steel framework, and immediately trades have a rigid working platform!"

Tough-temper, corrugated steel Tufcor makes fire-safe roof construction simple, fast and economical. For information, estimates or costs on your building plan, contact home or district office, attention Dept. P-5.

Handles Easily, Places Fast. Tufcor arrives pre-cut to building size. Measuring and cutting is eliminated. Two or three men can place up to 10,000 sq. ft. a day.



Permanent, Fire-Resistant Roof Deck is formed by cast-in-place slab. A strong bond forms between galvanized steel sheet and lightweight concrete fill giving high-strength rigidity to finished deck.

Green Hills Village Center, *Nashville, Tennessee* • Owners: *William C. Weaver, Jr., & W. H. Criswell*
Architects and Engineers: *Hart, Freeland & Roberts, Nashville, Tennessee* • General Contractor: *W. F. Holt & Sons, Nashville, Tennessee*

safe Tufcor roof new shopping center

Steel Sheets Are Quickly Clipped to the steel framing. Welding is equally fast. Positive attachment of tough-temper sheets adds rigidity to roof framework.

An Immediate Safe Working Deck is obtained as soon as Tufcor is attached. Light mesh is added for shrinkage control of the lightweight insulating concrete.

Insulating Concrete Placed on Tufcor is fast operation. On an average roof construction, this material weighs less than 6 pounds per square foot.

Perfect Base for Built-Up Roof. Deck offers two excellent advantages—a good firm base on which to apply the roof and an inorganic, permanent base for long life of the built-up roof.

Neat Plaster Ceiling over Fire-Safe Tufcor. Any normal ceiling treatment is easily applied to Tufcor. Its attractive galvanized surface is sometimes left unfinished when light reflection is wanted.

see our catalog in S or write for copy

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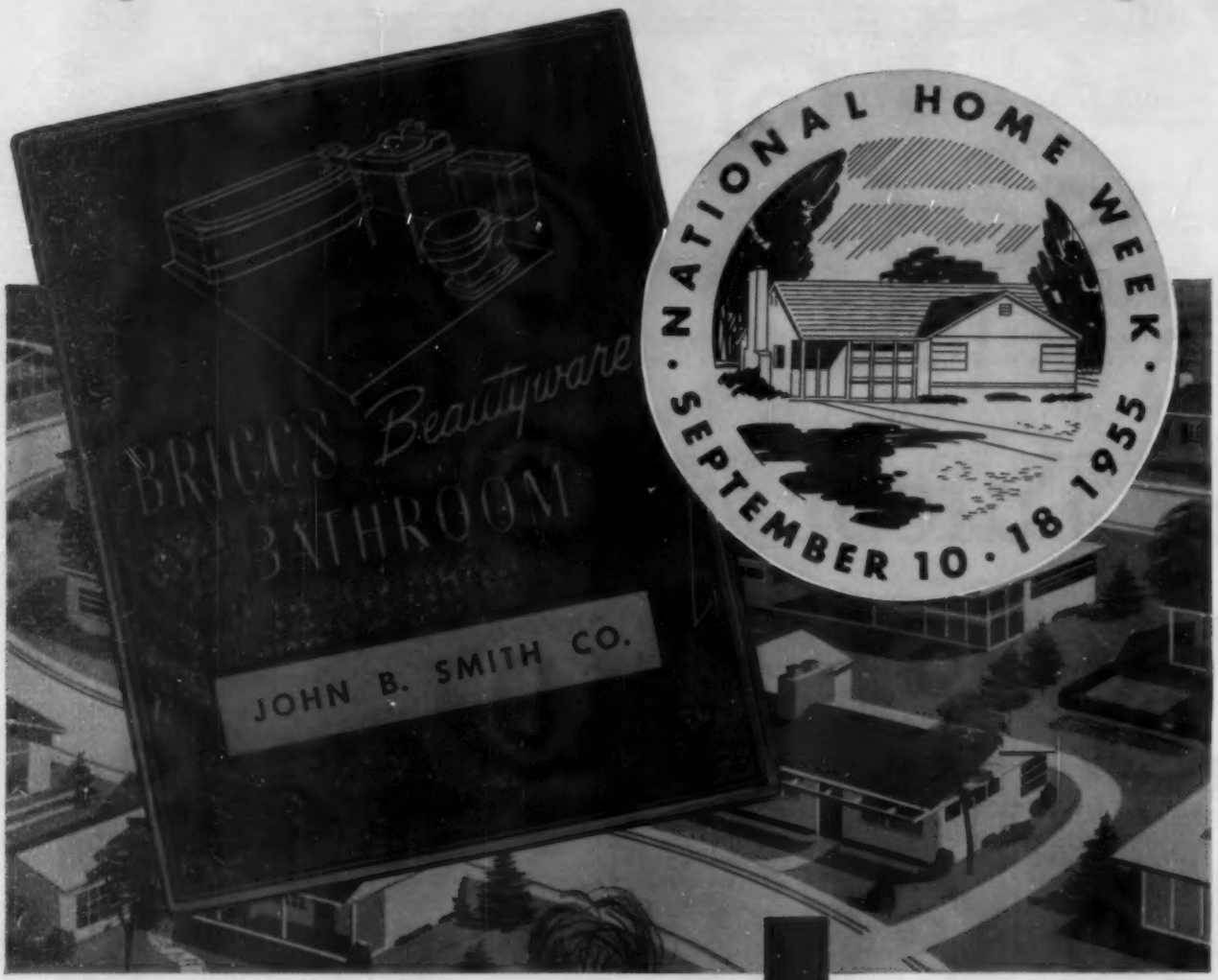

PLEASE NOTE: Interest in quality bathrooms—and especially *two* of them—will be stronger than ever during this year's National Home Week.

REASON: Colorful new bathrooms are a major factor in making people dissatisfied with their old homes—and in stimulating their interest in new ones.

Briggs Beautyware provides the design, the color and the features that are most appealing to your customers.

And you can capitalize on this famous brand-name product by displaying the Briggs Beautyware bronze plaque during National Home Week. This attractive plaque is available with your name imprinted at no cost from your local Briggs representative or from—

Briggs Manufacturing Co., 300 Buhl Bldg., Detroit, Mich.

Two Bathrooms of Briggs Beautyware —New Pattern for Today's Living

reviews

(Continued from page 184)

to our shores as a result of Nazi intolerance. He has that most enviable gift in our adverse and troubled times: the ability to live in a world of past values—a Ruskinoid, Pre-Raphaelite, or Nazarene approach to craftsmanship and its role in life, which, if already somewhat alien in Ruskin's century is even more anachronistic a hundred years later. Hammer is himself the "Craftsman" in this short dialogue with his "Patron." Painter and printer rather than author or architect, he places handiwork before theories about it. His message must be read, then, in the context of his works: first, the Chapel which the Craftsman built to house the Eucharist on the estate of another of his Patrons near Strasbourg (a good deal of the *Theory of Architecture* centers around this, apparently his one venture into the architectural field); second, the carefully archaic typography and design of this slender volume, with its Renaissance character. Hammer intends in fact to print a still smaller edition of all four chapters "set in my Uncial type . . . printed in folio size on handmade paper."

A Theory of Architecture is neither a theory in the strict sense, nor about architecture in the broad sense. It is a rambling discussion of values which have emerged from the author's search to understand the kind of building he admires —the Temple of Poseidon at Paestum, the Pantheon in Rome, the Piazza del Duomo in Siena. None of these is discussed in much detail, and they all but exhaust the concrete instances of architecture mentioned in the book. The Craftsman's own Chapel and its construction along simple, semiintuitive lines is described, but illustrated only in a schematic, Romanesque-looking elevation on the title page.

The Craftsman's message, touching as may be its earnest search for the warmth and intimacy of old-time craftsmanship, for the deeper and more universal meanings of things, so neglected in our specialized, secular age, will win but few converts today. It will convince only those who are willing to pay the price "of a

(Continued on page 190)

MEMO

TO: SPEC. Writers

SUBJECT: Interior Fire-Protection

Don't let the traditional stability of this field fool you. Current catalogs and supplement to A.I.A. file 29e2 show several new developments by Allenco.

Job supervisors report Allenco reliable delivery and faster-installation speed work. Also, clients are becoming more familiar with this field.

Suggest you check with local Allenco office or send for current ads.

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(Continued from page 189)

style that would be at once spiritual and regenerate."

What this price is, the Craftsman makes clear: "The full price for that would be abandonment of industrial methods of production, abolition of wage slavery, and complete renunciation of national prosperity." How this can best be achieved, we will learn as soon as the hand-set folio edition is printed.

MARTIN JAMES

protection examined

The Bomb, Survival and You. *Fred N. Severud and Anthony F. Merrill. Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y., 1954. 264 pp., illus., $5.95*

The Bomb, Survival and You: Technical Supplement. *Fred N. Severud and Kurt Bernhard. Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y., 1955. 45 pp., illus., $2.50*

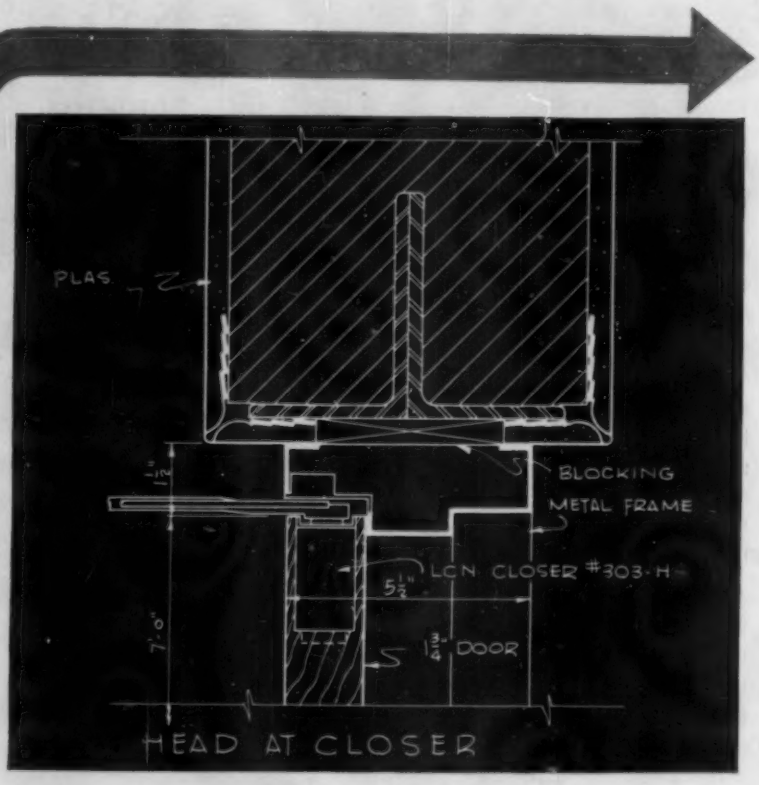
The very magnitude of the problem of securing protection from an attack by H-bomb has certainly contributed in some quarters to an ostrich-like reluctance to examine the known facts. It is fortunate that such a distinguished structural engineer as Fred Severud and Author Anthony Merrill have undertaken at this time a level-headed definition of the problem as it applies to structures. Their book is well written, in simple language, and should appeal to the general public as well as to the architect or engineer. The bulkier technical data has been offered in a separate volume (*A Technical Supplement to The Bomb, Survival and You, $2.50*).

In this book, the experience at Hiroshima and Nagasaki has been weighed against recent developments in the bomb and the special character of the Japanese cities, and is evaluated with reference to the U.S. Strategic Bomb Survey on dispersal and construction. Observation of the large part which fire and other secondary effects of the explosions contributed to the destruction of those cities leads the authors to present a number of concrete recommendations for the civil defense of our communities.

The authors' first concern is for the protection of personnel. Their discussion of the need for instantly available shelters will send most readers into the corridor to look for their own personal safest corner and encourage a personal interest in the practical steps which can be taken to increase the odds for survival. A number of measures are discussed, some very simple, others more elaborate; and it is clearly shown that the expense of shelters must be weighed against the value of continued service under threat, as well as the probability of enemy attack.

A chapter on the protection of essential equipment makes some interesting distinctions as to the vulnerability of different kinds of machinery to bomb blast and

(Continued on page 192)



CONSTRUCTION DETAILS

for LCN Closer Concealed-in-Door Shown on Opposite Page

The LCN Series 302-303 Closer's Main Points:

1. An ideal closer for many interior wood doors
2. Mechanism concealed within door; flat arm not prominent, and provides high closing power
3. Door is hung on regular butts
4. Closer is simple to install and to adjust
5. Used with wood doors; wood or metal frames
6. Practically concealed control at little more than exposed closer cost

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or See Sweet's 1955, Sec. 17e/L

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NEW PLANT OF SAWYER BISCUIT COMPANY DIVISION OF
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Construction Details on Opposite Page

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REVOLVING DOOR ENTRANCE DIVISION
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NAME and POSITION_____

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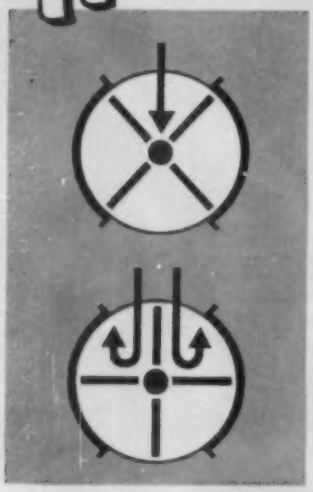
HOW REVOLVING DOORS cut heating costs



Drafts cannot be created through revolving doors, because at least two wings always contact the circular enclosure wall. Each passage admits only 26 cubic feet of outside air, compared to 1800 cubic feet or more admitted by a swing door entrance. Average savings of 25% or more on heating costs make a revolving door entrance a self-paying investment . . . only one of many reasons why these doors belong in your building or remodeling plans. Mail coupon above for newest data. See Sweet's Architectural File or classified section of your Telephone Directory.

International Revolving Door Entrance at the Boston 5 Cents Saving Bank, Boston, Mass. Architect: Archie Reskin, Boston, Mass.

INTERNATIONAL ALWAYS OPEN ALWAYS CLOSED VAN-KANNEL

REVOLVING DOOR ENTRANCE DIVISION
2052 EDGAR ST. EVANSVILLE 7, IND.

INTERNATIONAL STEEL COMPANY

reviews

(Continued from page 190)

to the secondary effects of weather, fire, and debris.

A large section is devoted to the strengthening of existing buildings. The authors insist that each structure must be examined as an individual case, but they are able to offer analytical criteria and to make specific recommendations. Chapters on windowless buildings and new bomb-proof or bomb-resistant structures introduce a variety of schemes, from slight modifications of conventional structures to new and extraordinary building forms.

Throughout this book, the authors have wisely refused to answer the difficult question of which structures should be bomb-proof, bomb-resistant, or contain shelters. Their clear and constructive presentation of the structural problems involved should enable the individuals and communities responsible for these decisions to face them more intelligently.

HEATH LICKLIDER

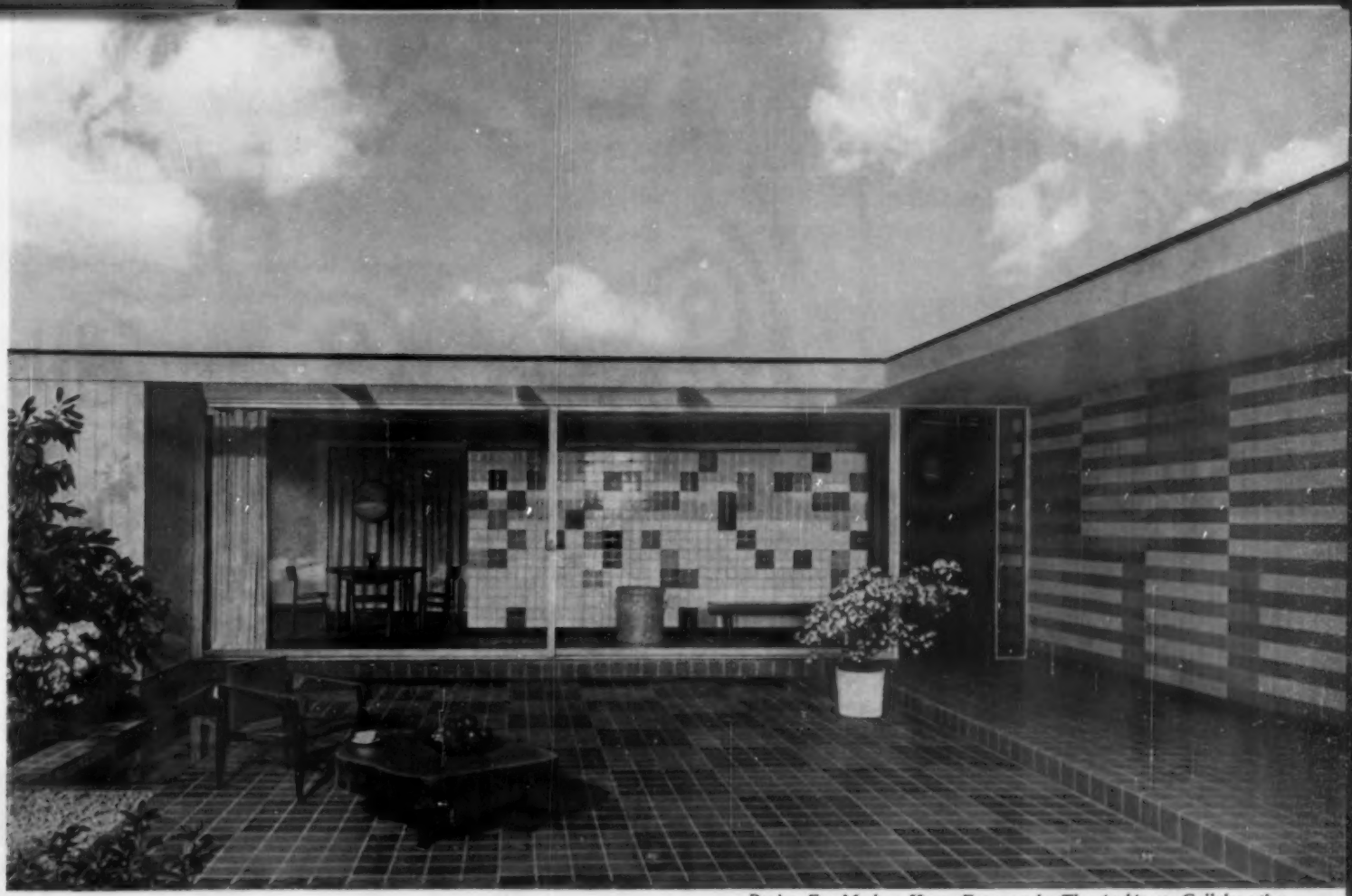
Editor's note: The Technical Supplement *to* The Bomb, Survival and You, *published since this review was written, presents the mathematical analysis of the effect of blast loading. Concepts usually overlooked in structural design — dynamic loading, acceleration of the structure, and inertia—are explained in detail and applied to a typical, one-way, reinforced-concrete slab.* L. G.

design down under

Houses, Interiors and Projects. *Harry Seidler. Associated General Publications, Sydney, Australia, 1954. Illus. (Wittenborn & Co., 38 E. 57 St., New York 22, N. Y. $9.50)*

In a sense, this is an architectural autobiography covering a five-year period from 1949 through 1954. For in this book, Seidler, one of the leading proponents of contemporary architecture below the Equator, combines his ideas and interpretation of principles with a photographic and technical record of his own work—and no one else's. Actually, however, the author has a far more significant purpose in his book than a mere record of accomplishment. His aim is to awaken the peo-

(Continued on page 195)



Design For Modern Home Entrance by The Architects Collaborative

"WHAT A WEALTH OF COLOR AND SERVICE CERAMIC TILE GIVES...INSIDE AND OUT."

Walter Gropius

For The Architects Collaborative

Architect Walter Gropius and his TAC colleagues captured the beauty and practical nature of ceramic tile in this forward looking home entrance and patio. Making the most of their material, they compel ceramic tile to contribute the maximum in design and service.

This project shows graphically the wide range of colors, surface textures and unit sizes available in ceramic tile. Note the heavy duty floor tiles on the patio . . . the matte finish glazed tiles on the exterior sidewall . . . and the small floor units surfacing the decorative pool. They all resist water, wear and weather.

Ceramic tile surfaces can help you put your clients miles ahead on maintenance, too. Tile floors, walls and counter tops never need strenuous cleaning, waxing, painting or replacement.

When you plan your next residential, commercial or institutional project, remember you can save your client future maintenance expense. In addition, you can give the distinction of custom installations by the imaginative use of standard ceramic tiles.

The Modern Style is

CERAMIC tile

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reviews

(Continued from page 192)

ple of Australia, particularly the local government authorities, to an interest in the basic principles of contemporary design and building in terms of the local conditions. His is quite an impassioned plea that something be done and there is no question of his sincerity nor of the merits of the case he presents.

In one of his opening chapters he presents the "local picture" in Australia, where he states that "planning patterns are essentially those of the Victorian era, perpetuated together with the limiting structural techniques of that time." Among other things, he deplores the fact that exteriors of buildings are bleak, with only limited window areas to admit light and air; that walls are made to carry the weight of floors and of roofs that are unnecessarily high pitched; and that there is utter disregard of any relationship of the exterior of a building to the local climate. He feels—perhaps justifiably—that the standards of domestic building in his country fall far short of providing either physical comfort or esthetically desirable surroundings. No doubt, many architects in other countries share similar opinions with regard to current "standards" in building and architecture.

In Australia, it seems that it is the authorities, rather than the people, who are to blame for the lack of acceptance of contemporary architecture. The author states: "These firmly entrenched and antiquated building habits are upheld and actually enforced by a powerful body of local government administration. By statutory powers entrusted to 'local councils' (constituted entirely of laymen) every building's design is assessed. Progressive architecture is generally frowned upon and permission is often refused for its construction. Courts of law have to be asked to give decisions in some cases of conflict. Fortunately, however, these are usually in favour of modern buildings. The very fact that contemporary architecture is put on the defensive and must be declared innocent through legal channels is surely grotesque. It thoroughly shows the gravity of the situation."

Whatever the "gravity of the present

(Continued on page 200)

Kinnear Steel Rolling Doors

(made by the originators of the famous interlocking steel-slat door)

give you highest efficiency,

(they open straight up, coil overhead, waste no floor or wall space)

extra all-metal protection,

(their rugged steel construction resists fire, wind, theft, vandalism)

Heavy galvanizing adds 1.25 oz. of pure zinc per sq. ft. of metal by ASTM standards.

and lower operating costs

(delivering up to 20, 30, and 40 years of continuous daily service with little or no repair costs, as proved by many case records in Kinnear's files.

Kinnear Rolling Doors are built any size, for old or new buildings, with manual, chain, crank or motor operation. Write for complete information.)

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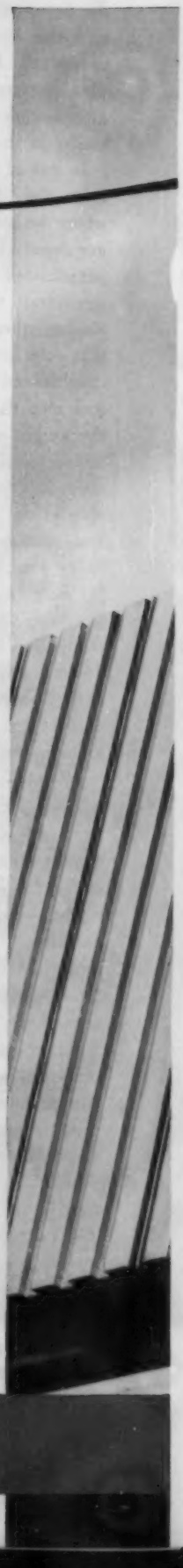
Here's a material for curtain

. . . that has high corrosion resistance
. . . that keeps its good looks with minimum cleaning
. . . that can be safely used in thin sections
. . . that can meet 2-side fire test requirements
. . . that's good for the life of the building



IF FIRST COST were the only consideration in planning a modern building, many of today's construction practices would be out the window. But first cost is only part of the picture; it's only one of the factors that determine overall cost for the life of the building.

That's particularly true of materials used for curtain-wall construction. There are materials with a lower original cost than Stainless Steel. But in the long run, the advantages of Stainless more than offset any difference. Here's why:

Stainless Steel has proved its ability to stand up in the face of atmospheric corrosion. The Empire State Building's Stainless trim has been in service a quarter of a century; there's no evidence of corrosion. Industrial buildings have given satisfactory service even longer. Besides, Stainless is the material to which the process industries turn when they have a severe corrosion problem.

Stainless Steel is attractive and decorative and it will remain that way through the life of the building. Cleaning—simply for the sake of appearance—is infrequent and easy.

Because of Stainless Steel's inherent strength and because no allowance need be made for the effect of corrosion, thin sections can be used. This lighter weight translates itself into important savings in building construction.

Stainless Steel has a high melting point, and when used with a proper insulating core, will meet fire test requirements from both inside and outside the building.

And finally, Stainless Steel is a material you can count on over the entire projected life of the building. There are no replacements and maintenance is at a minimum.

For true economy in curtain-wall construction, you'll find that nothing equals Stainless Steel.

As the producer of USS Stainless Steel, we have worked closely with the fabricators of Stainless Steel panels for curtain-wall construction. We'll be glad to send you further information and put you in touch with these fabricators. Write to United States Steel Corporation, Room 1921, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

See The United States Steel Hour. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

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5-209

UNITED STATES STEEL

wall construction

– Stainless Steel

BUILT-IN WARDROBES and cabinets of fine birch Weldwood make for neatness and good looks in the South School, New Canaan, Conn. Units are backed with fir Weldwood. Beautiful natural wood built-ins like these provide warm, informal atmosphere for any school location.

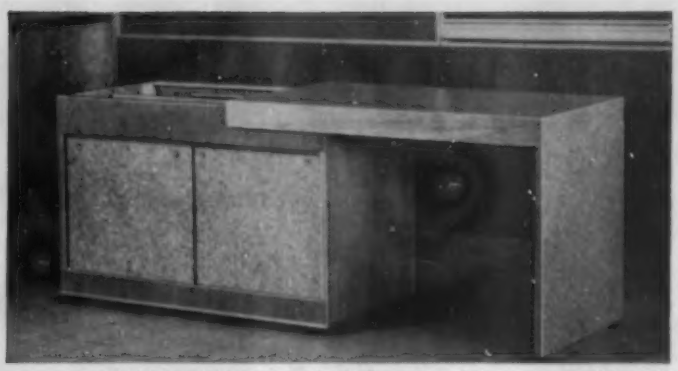
Functional built-ins add beauty, save on

MOBILE BOOKRACK of maple Weldwood also provides storage space in Greenville School, Scarsdale, N. Y. Back is of open-shelf construction.

RED OAK Weldwood Plywood makes beautiful sliding cabinets in kindergarten of Midland School, Rye, N. Y. Sink top and splash-back are blue-green Micarta.

SLIDING CLOSET doors and wall paneling are made of Novoply throughout Unqua School, Massapequa, L. I. Novoply is available in pine or California redwood.

BLACK MICARTA covers tops of fir Weldwood cabinets in classroom in Shades Valley High School, Birmingham, Ala. Used also in library, laboratories, kitchens and art room.



DUAL-PURPOSE teacher's desk and mobile storage cabinet is made of good-looking, durable Novoply. Foster A. Begg School, Manhattan Beach, Calif., has one in each classroom.

SLIDING PANELS cover built-in Weldwood Chalkboard, allowing one section at a time to be uncovered for quizzes and exams. Darien Junior High School, Darien, Conn.

LOW-COST, crack-free Novoply® makes superior classroom cabinets in Lyncrest School, Fairlawn, N. J. Cabinet tops are covered with Micarta in colorful Mardi Gras pattern.

costs, save on space, cut maintenance

Here are 8 practical Weldwood ideas for increasing the day-to-day value and utility of every room in a school

Built-ins solve some of the toughest problems facing the school planner. On these pages, you see a few of the hundreds of ways in which built-ins, constructed with Weldwood plywood, literally stretch school budgets.

FUNCTIONAL BEAUTY. There's nothing like the wonderful warmth of real wood for desks, wardrobes, racks, cabinets, bookcases. You get away completely from that antiseptic "institutional" look. Built-ins made of Weldwood increase class efficiency and organization, make each room look more personalized, more cheerful. And for especially hard usage, beautiful Micarta cabinet tops have proved in thousands of installations that they "can take it."

COST PICTURE. Weldwood costs less to install than ordinary materials, and built-ins of Weldwood often save enough on space alone to pay for the entire installation! Every square foot of floor space saved by built-ins pays the material cost for about 14 to 20 square feet of Weldwood plywood.

LOWER MAINTENANCE. Weldwood eliminates the need for costly periodic redecoration; waxing keeps Weldwood looking fresh and new indefinitely. And Micarta's extremely hard smooth surface resists scratches, won't dent or chip, wipes clean with a damp cloth.

DON'T FORGET WELDWOOD CHALKBOARD—its porcelain-on-steel* face attracts magnets for posting papers and for visual aid sessions, its soft green surface is easy on young eyes, and it *never* needs refinishing.

LIFETIME GUARANTEE. Weldwood Plywood and Chalkboard are guaranteed for the *life of the installation.*

REMODELING? Many communities find that their problem is twofold: new construction *plus* revamping of existing facilities. Built-ins of Weldwood help convert out-of-date classrooms, laboratories, teachers' lounges and gymnasiums.

SEND COUPON for further details, or visit your lumber dealer or any of the United States Plywood branches—87 offices in principal cities.

*Faces by the Bettinger Corp., Waltham, Mass.

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INSIST on DFPA grademarked fir plywood! EXT-DFPA and PLYSHIELD for outdoor use . . . PLYPANEL for paneling, built-ins . . . PLYSCORD for sheathing . . . PLYBASE for underlayment . . . PLYFORM for concrete form work. Other grades for other uses.

reviews

(Continued from page 195)

situation," it is quite obvious from the inspiring work illustrated in this book (28 houses, as well as apartments, factories, hostels, office buildings, etc., with specifications and technical drawings) that Seidler, who was trained by and has worked with some of the world's most famous architects, is well on the way in giving impetus to reform and energetic action. His work has caused much discussion and interest, not only within the architectural profession there but also among the lay public which has followed his progress and controversies with the local government authorities.

This book, aside from the local problem involved, should be of considerable interest to the architectural profession, as well as to students of architecture, in all parts of the world where there is any pattern of contemporary thought in modern design and building procedures.

FRANK A. WRENSCH

celebration volume

Masters of Modern Art. *Alfred H. Barr, Jr. The Museum of Modern Art. Distributed by Simon & Schuster, 630 Fifth Ave., New York, N. Y. 1954, 240 pp., illus., $15*

Haute vulgarisation is what the French aptly call learned source material presented to laymen on a high level: divulgation without vulgarity. Our age reaches to both the depths and the heights of "vulgarization," and for little over a quarter almost any drugstore bookrack will indulge tastes running from the highbrow to the lurid.

Like the natural and social sciences, visual art and especially modern art is riding the crest of a wave, a wave of genuine curiosity seeking new horizons, and booksellers will tell you that anything with pictures sells like hotcakes. From bums and madmen, in 15 years Gauguin and van Gogh have become the knights and heroes of modern folklore.

The printed word will travel on anything short of facial tissues; but art is more exacting. So is modern taste. The black-and-white engravings that meant something to our anecdotally minded ancestors will not do for a generation that

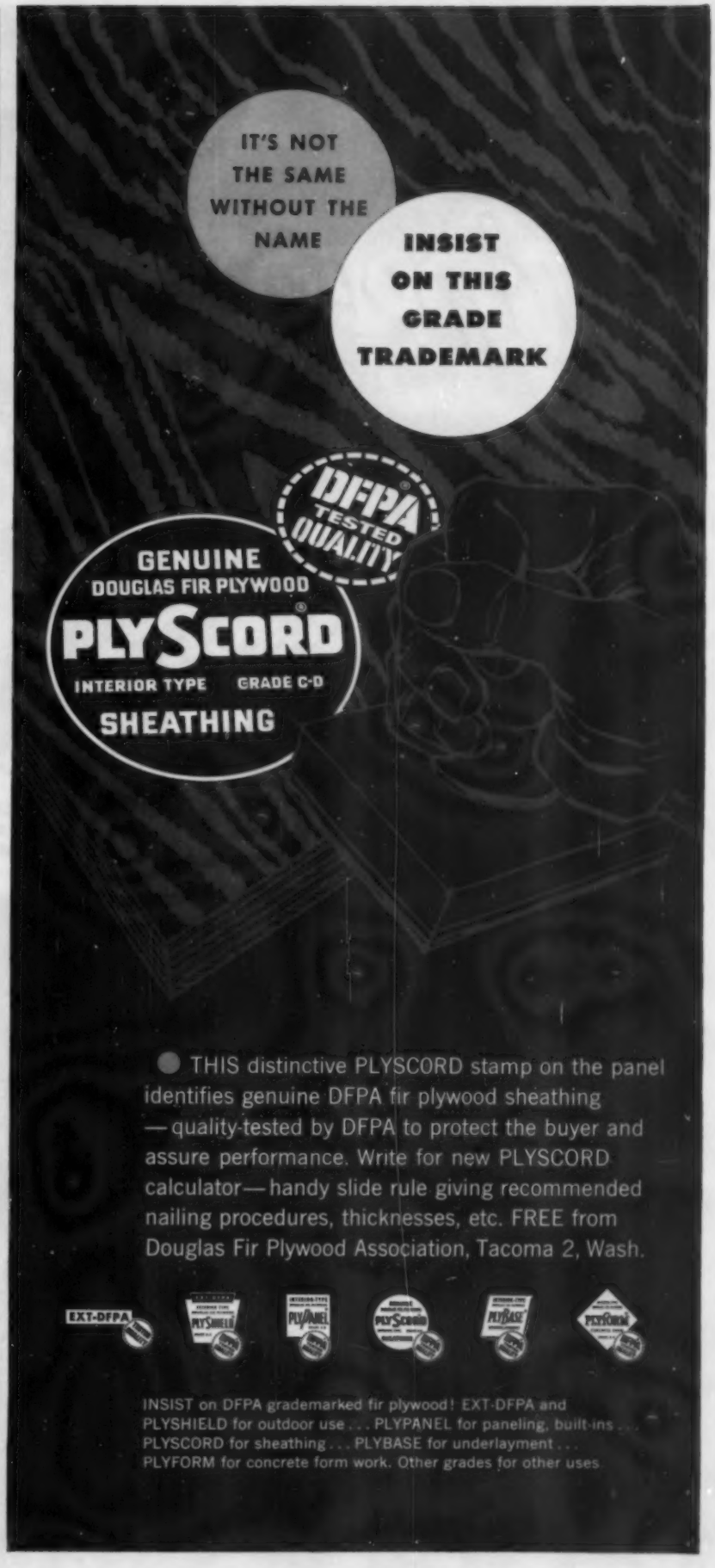
is keyed to the high color of the Skira series or to the close-scrutinizing details of the Malraux epic. Meanwhile, the market is flooded with cheap art printing and cheap art thinking. You don't have to be exactly a purist to wonder on what level of "vulgarization" to place *Famous Artists and Their Mothers* (a pocketsize book) or *Museum Cameos* (snapshot-size color prints, ready for pasting, circulated by a famous museum).

What makes the Museum of Modern Art's 25th anniversary an event is not that it has publicized modern art, but that it has publicized it on so high a level. With *Masters of Modern Art*, a celebration volume, the Museum illustrates 350 of its most valued and representative holdings out of a store of thousands. The book covers the fields of painting, sculpture, prints (30 of these are handsomely reproduced), photography (12 superlative examples), film, architectural models (a half-dozen), furniture and industrial design. Displays of objects of Art Nouveau, Bauhaus, De Stijl, and "machine art" provenance have been photographed by artists such as Herbert Matter, with a slickness and flair associated with *Vogue* or *Harper's Bazaar*.

Printed in Holland, luxuriously laid out, and with color plates seemingly made for the occasion, *Masters of Modern Art* is a high achievement of bookmaking, worth all its price. Among many impressive, memorable reproductions, one may single out the sculptures by Maillol, Lipchitz, or Lachaise, whose works are photographed in the architectural setting of the Museum garden. Their vision really comes into focus and gives thought to anyone anxious for a more mature synthesis of the plastic arts.

A text sometimes lyrical, sometimes descriptive, always concise and occasionally shot with Barr's dry humor interprets the pictures. The editor and his associates hold themselves in the background, allowing the artist or his critics, or authors of the Museum's books to speak. We have here a better feeling for the totality of modern art than is given by some of the more historically furnished tomes: a vividly meaningful guide to its varieties—varieties that "are real and sig-

(Continued on page 207)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ANOTHER CASE OF

COPPER

WHERE IT COUNTS

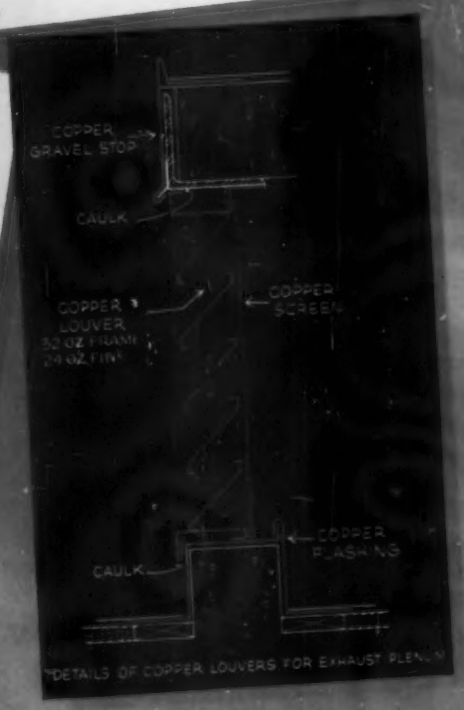
The new Fifth Avenue office of

MANUFACTURERS TRUST COMPANY

New York, N. Y.

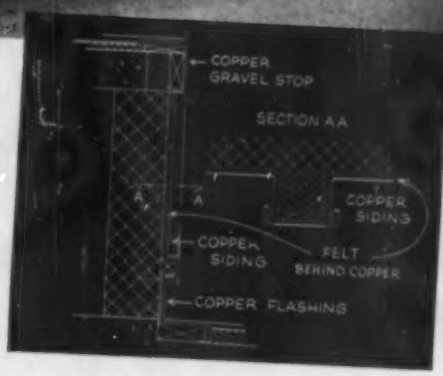
Architects: SKIDMORE, OWINGS & MERRILL, N. Y.
Gen. Cont.: GEORGE A. FULLER COMPANY, NEW YORK
Sheet Metal Cont.: JACOB RINGLE & SON, Jersey City, N. J.

LOUVERS for one of the air conditioning outlets atop the roof of the Manufacturers Trust Company being finished off. 32 oz. Revere Sheet Copper was used for the frame and 24 oz. for the fins. Detail shown at right.



DETAILS OF COPPER LOUVERS FOR EXHAUST PLENUM

MONITOR OF REVERE LEADTEX #15 COPPER of batten seam construction which houses the air conditioning ducts in the Fifth Avenue office of Manufacturers Trust Company. Of enduring, "ageless" copper, the centuries-tested metal, it will not rust, rot or deteriorate, seals against weather damage. One of Revere's Technical Advisors worked with the architects in the design of this monitor. Detail at right.



● In describing this drastic departure in banking institution design, Horace C. Flanigan, President of Manufacturers Trust Company, said, "The architecture of this bank, departing from the classic design of the past, uses to advantage the latest in form, construction and materials."

Among those materials is copper, not only man's oldest metal but in modern designs, such as this, man's newest metal, too. From its use on the 6-ton decorative screen of copper, nickel and brass to the flashing and monitor on the roof, the "ageless" metal copper stands ready to serve through the years without rotting, rusting or deteriorating.

In order to blend more perfectly with the off-white glazed brick used on the exterior of this great building, the architects specified Revere Leadtex #15 Sheet Copper. Revere Plain Sheet Copper was also used where color was unimportant. Altogether some 20,000 lbs. of copper were used.

One of the advantages architects will find in working with an organization such as Revere is a wealth of experience that can be a great help to them in many ways. In this particular instance one of Revere's Technical Advisors had the good fortune to be able to work closely with the architects in the design of the monitor which you see in the photograph at the top of this page. The architects and contractors were well pleased with the design which resulted from the Revere man's suggestions.

Why don't you take advantage of Revere's more than 153 years of experience in copper and its alloys? Also, we believe you'll find it worth your while to find out about the many money-saving advantages of Revere Keystone Thru-Wall Flashing.*

*Patented

AT TOP OF PHOTO YOU SEE part of the 714 lbs. of Revere Keystone Thru-Wall, 3-Way Flashing used where monitor joins main wall of building. Weather is kept in its place (outside) with enduring Revere Copper Flashing on the job.

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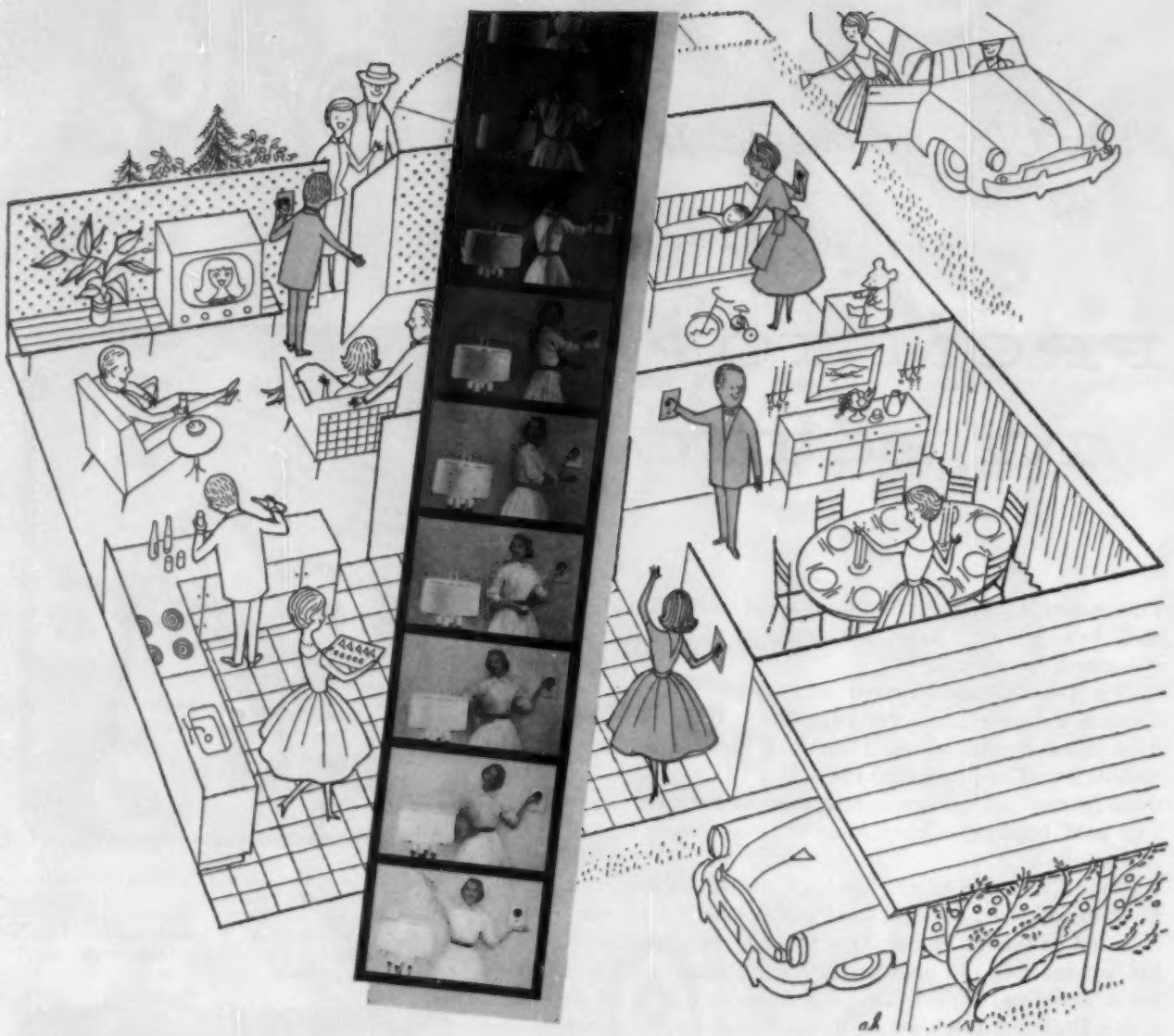
Texas National Bank Building, Houston, Texas. *Architect:* Kenneth Franzheim, A.I.A., Houston, Texas. *General Contractor:* Manhattan Construction Co., Houston, Texas. *Aluminum Contractor:* Flour City Ornamental Iron Co., Minneapolis, Minn.

Over 2,100 panels were formed on a 750-ton hydraulic press in Flour City's shop. Complete design and erection services as well as fabricating facilities make Flour City an integrated aluminum contractor.



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reviews

(Continued from page 201)

nificant, slowly developed, passionately believed in, and expressive not only of artistic convictions, but of deeply felt philosophies of modern life." It is also an answer to an almost-always frustrated need: a keen interpretive handbook to a museum's leading works.

The *Masters* of the title raises conflicting expectations. This writer, for instance, who could live without a good part of the Museum's collection, has never warmed to John Kanes's muscular self-portrait, though Barr's carefully chosen words do bring it closer. Or one wonders how it feels to be canonized with Cézanne, Matisse, or Picasso—as are Wilfredo Lam and Jackson Pollock. Indeed, no affront is meant to Pollock if one asks what part of his fame abroad (Barr says it is becoming comparable to Calder's) comes from the prominence the Museum has given him. This is a furiously busy world, and to select one painter like Bradley Tomlin, though safer (this excellent and gentlemanly painter having died), raises the inevitable question: why have the first-rate Mr. X, Y, or Z been left out?

Such questions are as old as the Museum itself, in fact as old as museums themselves. Do personal prejudices enter into the matter? I don't doubt it for a moment. Is the Museum the arm of a new Academy? Perhaps. Are the Masters of Modern Art (or more cynically, Masters of Modern Artists) none other than the Museum authorities and compilers of the book?

Once again the answer is: to a degree, unavoidably, yes. But this is the Museum's (any museum's) perennial dilemma. The Museum of Modern Art has occupied the hot seat for 25 years; it has faced this problem squarely, courageously, and by all evidence, honestly, even if not to everyone's total satisfaction. For my part, I am willing to have them keep it up for the next 25. MARTIN JAMES

AIA film report

ARCHITECTURE—U.S.A. *Edited and assembled by Ralph E. Myers, AIA, of Kivett & Myers, Kansas City, Mo.*

The Arnold W. Brunner scholarship, awarded annually by the New York

(Continued on page 210)

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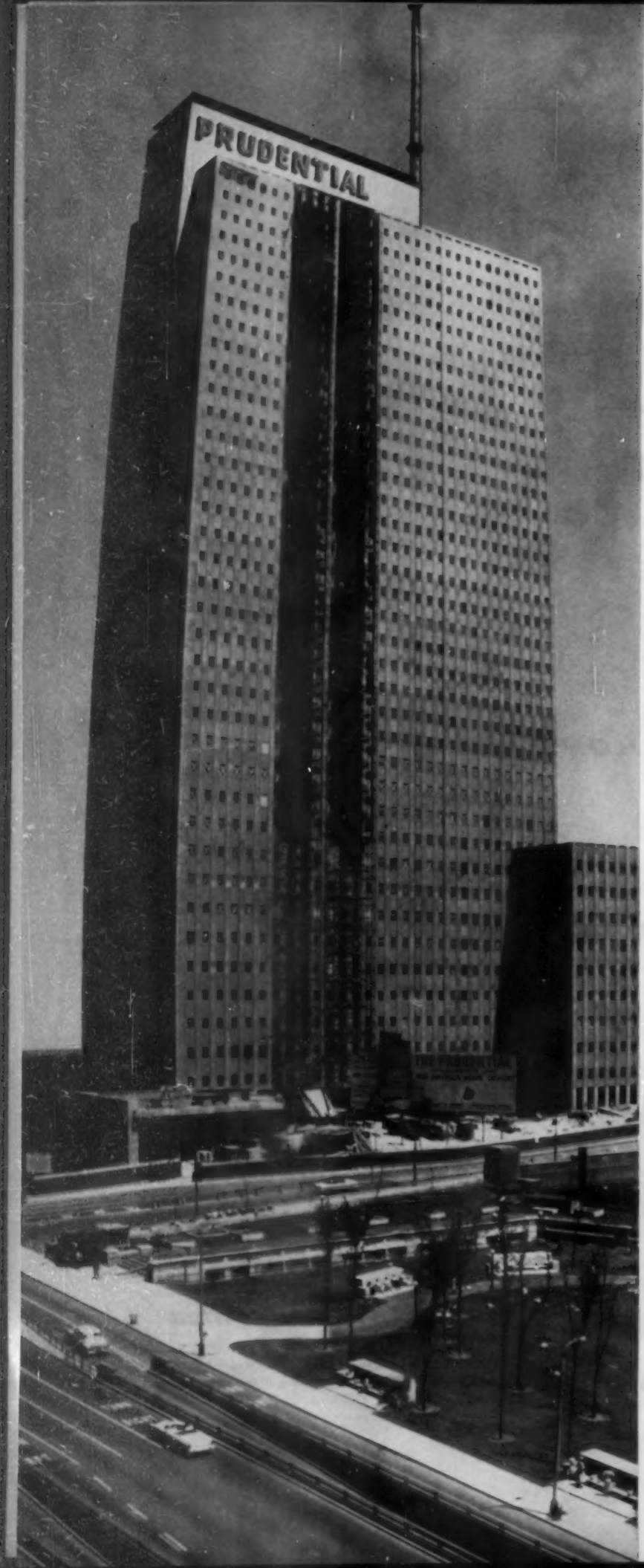

Special panoramic photograph of the Prudential Building, Chicago, made during late stages of construction. Courtesy Chicago Tribune.

Classic

To sound the praises of everyone concerned with bringing this modern structure into being would merely be a repetition of the obvious . . . The same is true of Day-Brite—the classic line of light.

It is enough to say that Day-Brite troffers are already installed—in lobbies, corridors, general and private offices, escalator and stair wells. Occupants are in, enjoying a high degree of visual comfort.

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General Contractors: *George A. Fuller Co., New York.*

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TO ARCHITECTS, ENGINEERS

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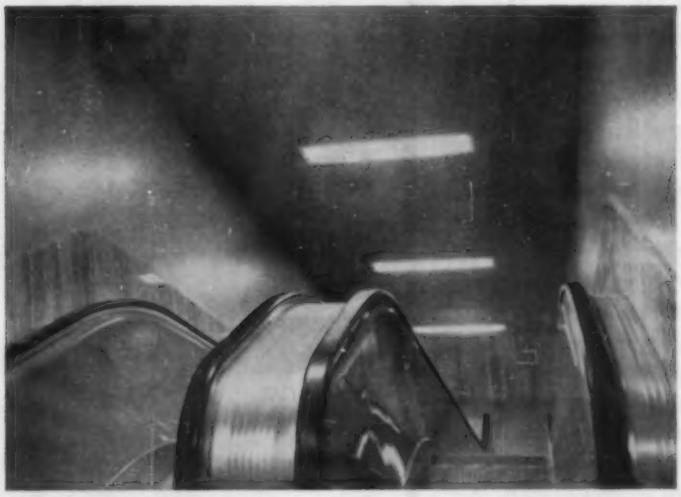

A CLEAR PATH OF SAFETY for escalator and stair passengers is provided by these Day-Brite troffers, mounted at right angles to the line of passenger travel.

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reviews

(Continued from page 207)

Chapter of the American Institute of Architects, has given original impetus to this film report on contemporary American architecture. ARCHITECTURE—U.S.A. is a presentation of 140 color slides with recorded commentary, featuring outstanding contemporary examples of homes, schools, offices, factories, churches, and many other building types. The work of 62 architects and architectural firms is represented in this excellent educational film, intended for presentation before school assemblies, service clubs, womens' groups, and similar organizations. The film may be shown on standard 16 mm. sound equipment and has a running time of 26 minutes. The first official showing was at the 1955 national convention of the AIA and it will hereafter be available for other organizations. I.M.R.

a CIAM review

A Decade of Contemporary Architecture. *Siegfried Giedion. Revised and enlarged edition. George Wittenborn, Inc., 38 E. 57 St., New York, N.Y., 256 pp., illus., $9.50*

The second and enlarged edition of *A Decade of New Architecture* provides a 40-page supplement of examples from the period, 1947-1954. The anthology was published under the auspices of the CIAM and succeeded in providing a broad view of 10 years of architectural work by a group of architects with common aims (the "international group"). The prospect was impressive because of the world-wide scope of activity, valuable because it illustrated a concerted attempt to discover an architecture appropriate to our time and technology.

Both the editorial comments and conference reports are understandably diffuse, reflecting the widely varying interests and backgrounds of the Congress. A certain amount of pretentious verbiage would seem to have been avoidable: The CIAM has, for example, solemly discovered that a city should have a center, "the core of the city," that regionalism may be desirable, and that one must cultivate "social imagination" to plan cities. The heart of the matter, the executed work,

(Continued on page 213)

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LUPTON
METAL WINDOWS AND CURTAIN-WALLS

reviews

(Continued from page 210)

shows a most heartening breadth of approach and an inventiveness which argues well for the New Architecture.

The supplement includes a number of designs of extraordinary interest; but the activity which has taken place in the architectural world between 1947 and 1954 and the relative poverty of the preceding decade makes it inevitable that the selection of a few additional examples appear arbitrary. HEATH LICKLIDER

needless obstacles

Architectural Blocks in School Buildings. *Bryant & Walchli, 105 West Adams St., Chicago 3, Ill., in co-operation with Illinois Commission for the Handicapped Children, 1954. 16 pp., illus.*

Although this little booklet was prepared especially for school authorities in Illinois, the import of its purpose and the message it conveys might well be heeded by school authorities and school architects throughout the Nation. Statistics show that one child in 10 has some physical disability and because of the difficulties in getting about readily that child is denied the customary public school education. After intensive study of the problem of "architectural blocks" in school buildings, the sponsors of this booklet came to these conclusions: children are barred from schools in their communities and are receiving inadequate or makeshift education solely because of such architectural blocks; many simple changes can be made in existing schools to remove or relieve these barriers and with economy; new schools can and should be designed to insure handicapped youngsters convenient access to them and safe and independent movement within their walls. Some of the architectural blocks, of course, are heavy and unmanageable doors, long stairways, varying floor levels, hazardous floor surfaces, lack of proper handrailings, stationary equipment such as blackboards, seats and desks, and work tables.

The social problem involved is at once evident, since most educators agree that the physically handicapped children—those who have to move about in wheel

(Continued on page 214)

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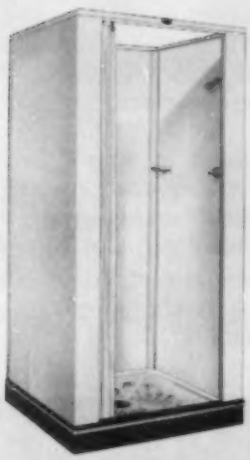

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reviews

(Continued from page 213)

chairs, on crutches, or wearing leg braces—should, whenever possible, be educated in the same building with the other children of their community and share the normal experiences of childhood, since isolation and segregation in this phase of a child's life may injure normal and healthy emotional growth and adjustment. The brochure is not concerned with the special schools for handicapped children, but merely with conditions that exist in present-day public buildings.

By concise but telling text, accompanied by a series of self-explanatory photographs and drawings, the architectural firm of Bryant & Walchli has offered practical suggestions as to how architectural blocks can be eliminated in existing buildings without excessive and expensive remodeling—and how they can be "built out" of buildings that are contemplated. School boards everywhere and the architects engaged by them would do well to analyze thoroughly the problems and their solutions in this worthwhile booklet. Surely, they do not have to be convinced that the doors of the country's schools "must be opened wide" for all the children. FRANK A. WRENSCH

our senior citizens

Housing the Aging. *Edited by Wilma Donahue. University of Michigan Press, Ann Arbor, Mich., 1954. 280 pp., $3.75*

Essentially a report on the University of Michigan's Fifth Annual Conference on the Aging, this volume consists of a series of 22 papers by experts on various aspects of this ever-widening problem.

The book defines the situation as it is today and suggests desirable solutions for housing, not only healthy older persons but also the chronically ill and infirm, in both urban and rural areas. An increasing number of architects is being called on to design satisfactory residence for our senior citizens. This compendium provides a solid foundation for an intelligent approach to the problem, discussing as it does the needs and the various types of buildings required for the different categories, ranging from detached houses

(Continued on page 216)

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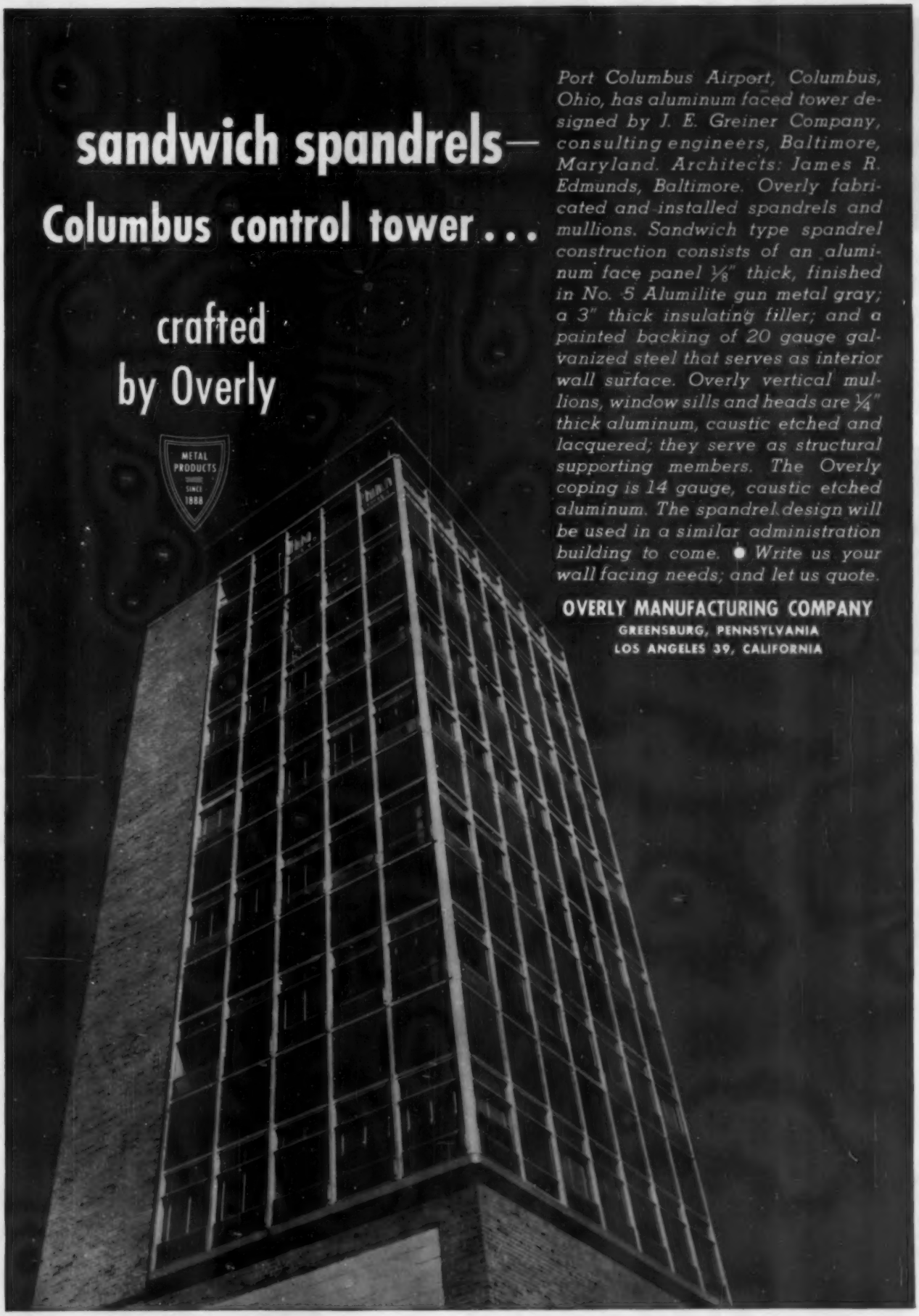

Port Columbus Airport, Columbus, Ohio, has aluminum faced tower designed by J. E. Greiner Company, consulting engineers, Baltimore, Maryland. Architects: James R. Edmunds, Baltimore. Overly fabricated and installed spandrels and mullions. Sandwich type spandrel construction consists of an aluminum face panel ⅛" thick, finished in No. 5 Alumilite gun metal gray; a 3" thick insulating filler; and a painted backing of 20 gauge galvanized steel that serves as interior wall surface. Overly vertical mullions, window sills and heads are ¼" thick aluminum, caustic etched and lacquered; they serve as structural supporting members. The Overly coping is 14 gauge, caustic etched aluminum. The spandrel design will be used in a similar administration building to come. ● *Write us your wall facing needs; and let us quote.*

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reviews

(Continued from page 214)

to communal dwellings, to nursing homes and hospitals. A final section of the book suggests ways of obtaining helpful community action, and a number of case histories of programs that are currently operative are given.

Probably the chapters on the specific requirements in designing facilities for the aging will be of the greatest interest to architects. G. A. S.

traditional/reasonable

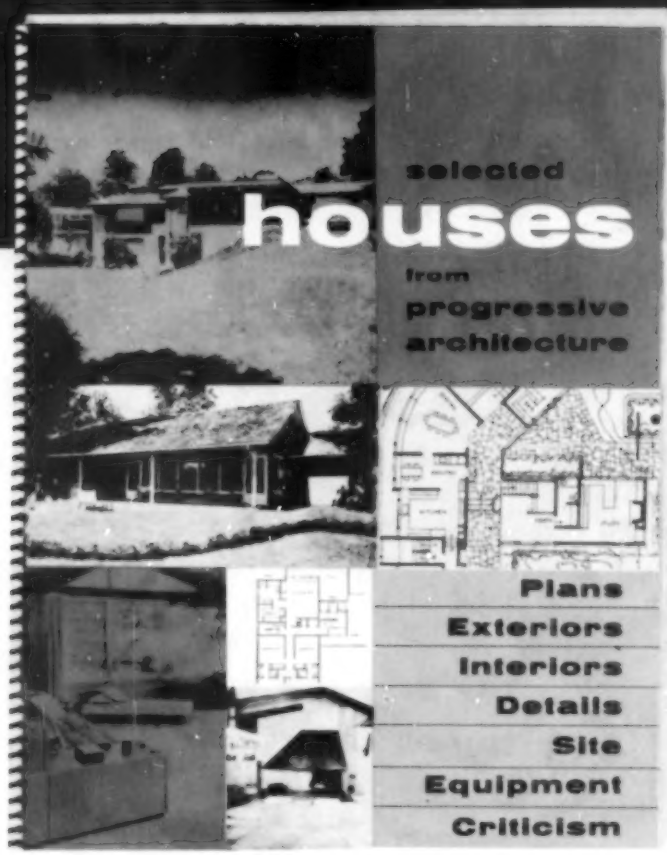
Living on the Level. *Royal Barry Wills. Houghton Mifflin Co., 2 Park St., Boston, Mass., 1955. 120 pp., illus., $5 (paperbound, $2.69)*

Royal Barry Wills, who will be remembered as perhaps the ablest interpreter of the Cape Cod Cottage, executes a graceful bow to the times in this latest book of single-level houses. The introductory section begins with a rather wistful essay defining the position of an architect who wishes to be both traditional and reasonable—and continues to provide a number of helpful tips to clients about to build a house, on the formulation of their needs, selection of a site, building costs, the value of architectural services, etc.

The designs for houses, which comprise the major portion, are shown in plan and perspective drawings, and range from close adaptations of Colonial types to bland versions of the Ranch House and a few houses which owe little to the past. The plans show great skill in the disposition of space for use and a nice discrimination in the isolation of interior circulations; but the absence of any over-all site plans makes it difficult to judge their suitability to the specific place. The perspectives reveal a fine eye for the picturesque and for simple effective detail.

This reader is led to speculate that if all designers of "Cape Cod Cottages" were as skilful, the spread of a purely contemporary residential architecture might be set back 50 years. The architect who specializes in small houses may be led to speculate further if Wills has not exactly defined the change in popular taste in this book. HEATH LICKLIDER

(Continued on page 219)



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reviews

(Continued from page 216)

informative guide

TV Stations: A Guide for Architects, Engineers and Management. *Walter J. Duschinsky. A Progressive Architecture Library book. Reinhold Publishing Corporation, 430 Park Ave., New York 22, N. Y., 1954. 136 pp., illus., $12*

A richly informative guide in the relatively new, unexplored field of TV Station design and operation.

The author's training and experience equip him to speak authoritatively on the many facets of his subject: Master planning, site selection, typical station, plant, personnel, programming, technical equipment, finances, color television, etc.

The information is well organized; clearly presented in an easily readable manner; helpfully illustrated.

The pages contain much organizational, operational data and details; items of architectural interest are considerably less in extent. While the work cannot be said to have solely an architectural slant, architects interested in TV Station design will find its contents helpful as background information. LAWRENCE E. MAWN

freshness of approach

Arkitekten Arne Jacobsen. *Johan Pedersen. Arkitektens Forlag, Bredgade 66, Copenhagen K, Denmark, 1954. 97 pp., illus., $5*

Also available through Museum Books Inc., 48 E. 43 St., New York 17, N. Y., $6

United States knowledge of the new architecture in Denmark is lamentably sketchy, while information on its practitioners is even more remote. Several smallish books since the war have given us glimpses of this highly personal and fresh work but few of these have enjoyed either comprehensiveness or any particular currency in this country. This is unfortunate.

A new volume which will at least illuminate the imaginative work of one man is *Arkitekten Arne Jacobsen* by Johan Pedersen. This is a slender but attractive book with a several-page introduction and extensive illustrations. Both introduction and captions are given in English as well as Danish.

(Continued on page 222)

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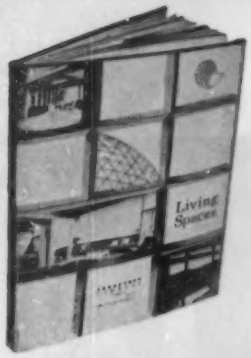

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reviews

(Continued from page 219)

Arne Jacobsen at 53 has built a substantial part of the new face of Zeeland. His Bellavista flats of the early 1930s are still among the finest apartments in Europe; his nearby filling station probably the best ever built; while his Town Hall at Aarhus (Erik Möller associated) has some of the most interesting public interiors to be found. And in the last few years he has designed a series of houses and housing developments of an ingratiating novelty. Especially in an interplay and counterpoint of roof line will Jacobsen spark an interest in this country. For in this important element of design he always eschews the dogmatic flat plane, even in large housing projects, and seeks instead rhythmic angles of surfaces. The roofs of his new work at Gentofte and Söholm, for instance, are full of a refined and elegant liveliness.

The book closes with a brief section of the gardens, furniture, and industrial design which Jacobsen has produced—multiple extensions of the architect's province, so woefully rare in this country.

Arkitekten Arne Jacobsen should be in the library of every architect who, tired of the repetitive cliché inundating the United States, would like a look into Scandinavian freshness of approach, imagination, and soundness of construction.

G. E. KIDDER SMITH

reference compendium

Materials and Methods in Architecture. *Edited by Burton H. Holmes. Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y., 1954. 412 pp., illus., $10*

There is a long sequence of events between the original appearance of an article in a magazine and the time when it is finally read. First, the magazine is scanned and important articles to be read are spotted. Then, the magazine is lovingly carried in a brief case so that the articles may be read at leisure over the weekend. Finally, the magazine, having had its share of brief-case travel (still unread), is removed from the case to

(Continued on page 226)

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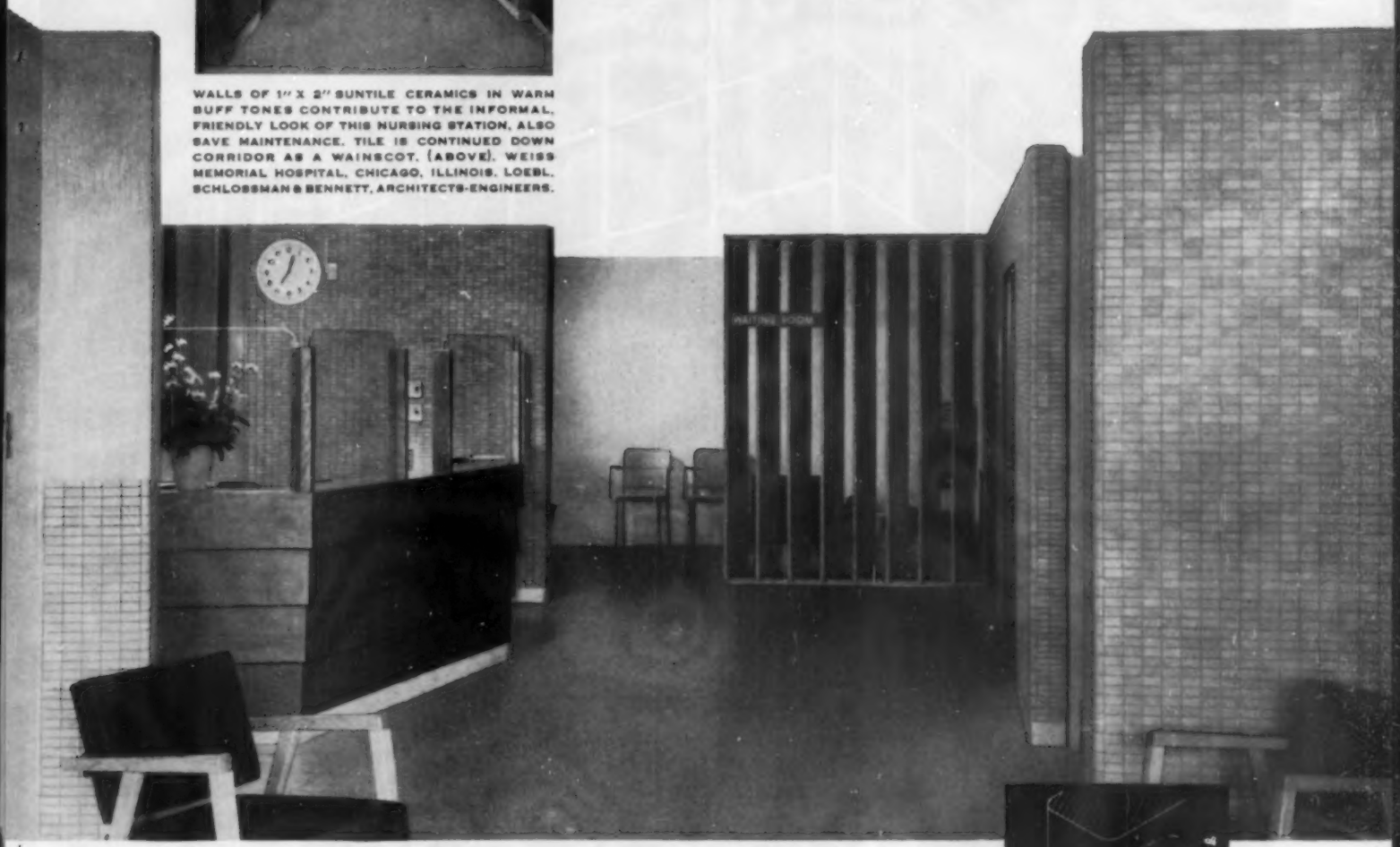
Suntile ceramics

help give a hospital home-like scale...

WALLS OF 1" X 2" SUNTILE CERAMICS IN WARM BUFF TONES CONTRIBUTE TO THE INFORMAL, FRIENDLY LOOK OF THIS NURSING STATION. ALSO SAVE MAINTENANCE. TILE IS CONTINUED DOWN CORRIDOR AS A WAINSCOT. (ABOVE). WEISS MEMORIAL HOSPITAL, CHICAGO, ILLINOIS. LOEBL, SCHLOSSMAN & BENNETT, ARCHITECTS-ENGINEERS.



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Architects:
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Engineers and Builders:
The Austin Company, New York, N.Y.

Architectural Metal Fabricator-Erectors:
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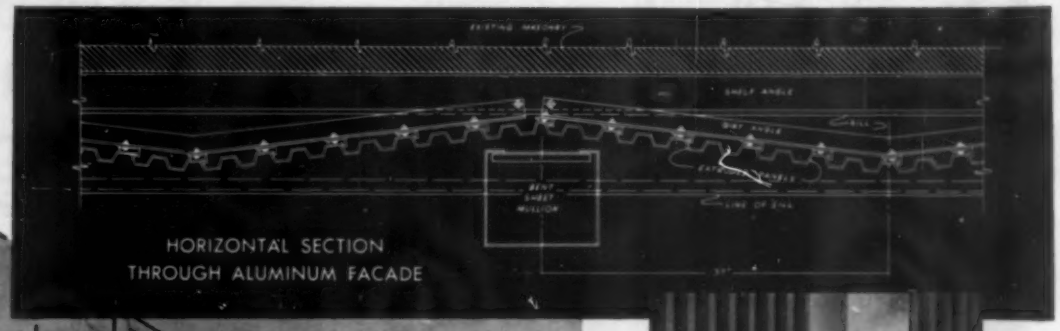
REYNOLDS

The transformation of Thalhimers is the first department store application of this interesting modernization method—distinguished by unusual architectural treatment in its extruded aluminum spandrels anodized grey. *

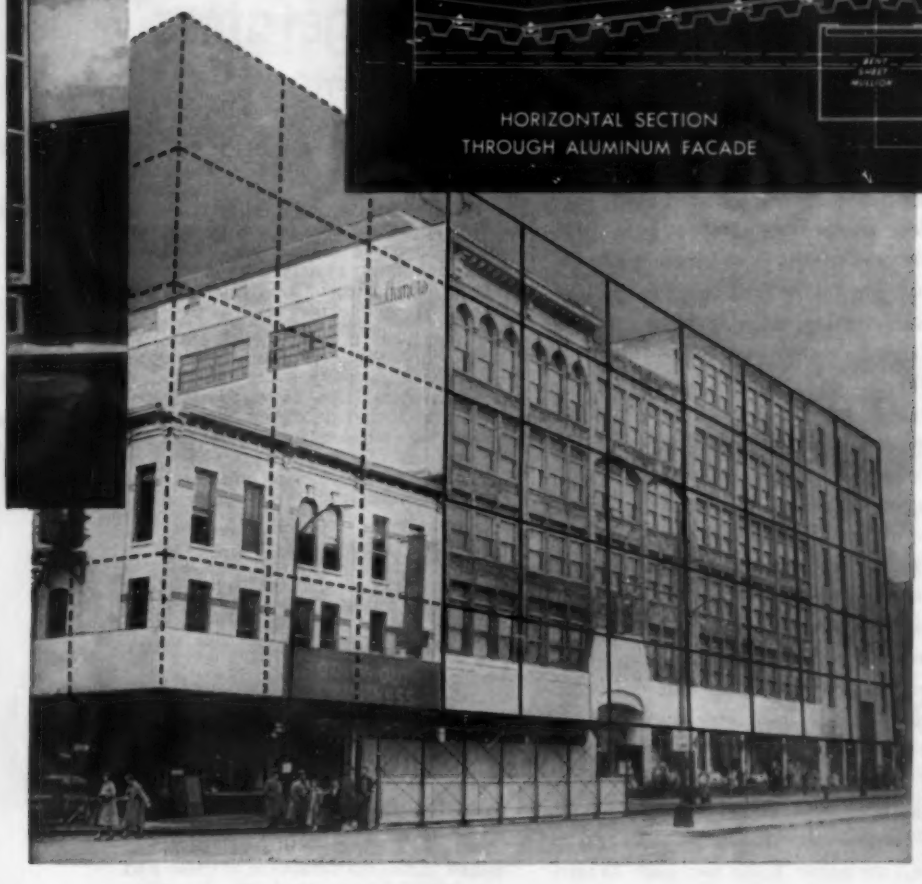
The principle is to enclose a group of buildings, both new and old, within a complete new shell—remodeling and air-conditioning the original interior.

Aluminum is ideal for this method. It makes possible a light, strong exterior shell that is easy to erect. Its freedom from rust and resistance to corrosion minimize maintenance. Its radiant heat reflectivity can be utilized to add insulation value.



HORIZONTAL SECTION
THROUGH ALUMINUM FACADE

DETAIL OF SPANDREL,
MULLION AND PILASTER



Overlaid lines show how the Thalhimers buildings will be enclosed by an all-aluminum shell — all Reynolds Aluminum except for ground floor display windows. Spandrel panels are extruded aluminum, anodized grey. Horizontal mullions and pilasters are natural color aluminum formed sheet. Dotted lines indicate how the entire buildings at the left corner will be replaced by a new structure.

*Reynolds is completing an expansion program which will provide the largest aluminum anodizing facilities in the world.

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1904 Mars-Lumograph leads are so opaque, inking-in is unnecessary; won't flake or smudge, give better reproduction. Perfectly graded in 18 degrees—EXB to 9H; $1.20 doz., less in quantity.

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HACKENSACK, NEW JERSEY
at all good engineering and drawing material suppliers

reviews

(Continued from page 222)

make room for the next crop and joins a pile of older confreres which, when leisure time is at hand, will be properly cut up and filed.

When the time comes that some specific technical information is urgently needed, the Reader remembers so clearly having seen the right article, but "was it in the May or July issue, 1953 or 1954?"

The Editor at last grows impatient and armed with scissors and paste goes through his own set of back copies and turns up the most efficient scrapbook, with hard cover and index thrown in, for a small fee. The Reader is delighted and now, when he needs some information, knows where to find it.

This may not be exactly the story of *Materials and Methods in Architecture*, but it could be!

This reviewer does not feel it necessary to review for P/A readers the P/A articles which are included in this volume; they are a collection of old friends which, even if they have not been previously read in full, have been classified as a *must* for future reading.

But it takes more than a group of articles, no matter how intrinsically good in themselves, to make a book—and *Materials and Methods in Architecture* is a very successful book. There are two reasons for its success: the first is the subject, which in itself implies a collection of many different items—there are only very few subjects which may lend themselves to this type of book. Second reason for success is the inclusion of 21 brief essays by the author-editor, which introduce every chapter and every section. These articles very unobtrusively, but successfully, fill in the gaps which are unavoidable in the metamorphosis from articles to book; for example, in the section on "Insulation and Structure," the editor felt it necessary to mention the sound-proofing system of the new Montana State University School of Music. As he had no article on this building, he described this system in his introduction to the chapter. Thus, the reader is not left out of anything worthy of mention.

BRUNO FUNARO

(Continued on page 228)

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*Photo courtesy of STAINLESS FOOD EQUIPMENT CO.

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Perma-Topp's slate granule surface provides colorful beauty—with heat reflective properties when the lighter colors are specified. It never needs resurfacing, thus coating maintenance costs are eliminated . . . an economy feature your clients will appreciate. Perma-Topp will not "slide," another reason why it's ideal for saw-tooth or dome roofs. The coupon below will bring you complete specification details on Carey Fire-Chex Perma-Topp Roofing.

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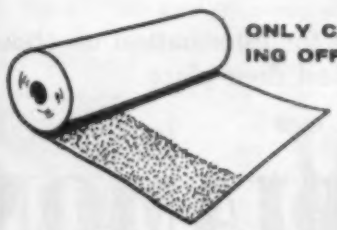

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reviews

(Continued from page 216)

superior reference

Mechanical and Electrical Equipment for Buildings, 3rd Edition. *Charles Merrick Gay, Charles De Van Fawcett, and William J. McGuinness. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y., 1955. 614 pp., illus., $8.50*

Three characteristics make this new edition of an established reference book a pleasant work to review. First, its treatment is practical; second, it is readable; and third, it is complete (excepting one item noted below).

There are six major sections covering water and firefighting, sanitation, heating, air conditioning, electrical equipment, and acoustics. These subjects are approached from the standpoints of equipment descriptions and system design.

Equipment descriptions have been revised to bring them up to date, noting changes since the previous edition of 1945. The design discussions are limited in scope, necessarily, but procedures are considered in enough detail to guide the architect in his preliminary planning and to aid the engineer who is acquainted with, but not expert in, all these fields. Since complicated mathematics have been avoided, students and others with limited mathematical backgrounds will find the design discussions easy to follow.

The sections on lighting, moving stairways, and acoustics provide particularly handy, information on materials and design that usually is available only from scattered sources. Finally, there is a convenient appendix on applicable articles of the National Electrical Code.

The single omission which causes this book to miss absolute completeness is a presentation of incinerators. Certainly, incinerators fired with gas or oil are mechanical components of many buildings, especially large hotels and apartment houses. Perhaps the authors will rectify this omission in the next edition.

Architects, engineers, contractors, teachers, students, building managers, and maintenance personnel should find continuing values in this work.

ROBERT HENDERSON EMERICK

National Education Association Bldg., Washington, D.C. • Architect: J. H. Saunders
Consulting Architects: Reisner & Urbahn • Structural Engineers: Beall & LeMay
General Contractors: Joseph F. Nebel Co.

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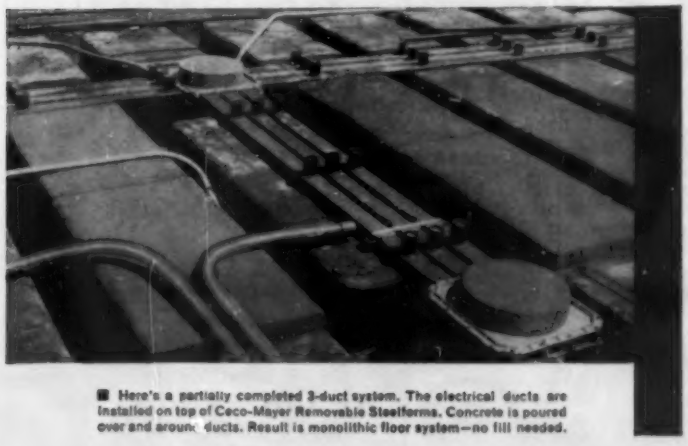

■ Here's a partially completed 3-duct system. The electrical ducts are installed on top of Ceco-Meyer Removable Steelforms. Concrete is poured over and around ducts. Result is monolithic floor system—no fill needed.

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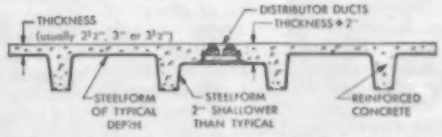

Cross-section through distributor ducts, showing the strength and simplicity of R/C Duct Floors made with Ceco-Meyer Reinforced Concrete Joist Construction.

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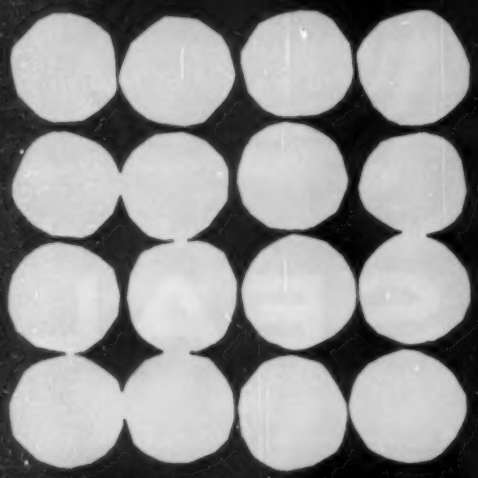

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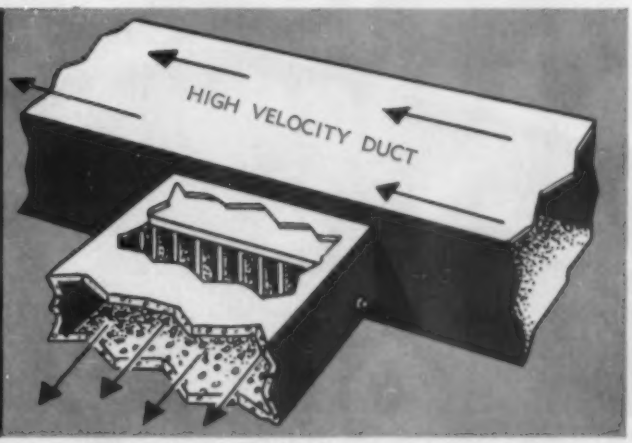
uni-flo Engineered Air Distribution

How high velocity air valves solve space and cost problems

Several problems faced engineers planning a year-round, high velocity air conditioning system in this Morrison, Illinois, building after it was purchased by General Electric Company. The air conditioning system with all ten zone reheat coils had to be installed in a small equipment room. Ducts had to be located over existing suspended ceilings, without interfering with piping already in place. Efficient distribution at low noise level was the final objective—at a price within budget requirements. A trip to the Barber-Colman Laboratory convinced system designers that Uni-Flo Air Valves can be used at branch duct take-offs to deliver low velocity air to branches from high velocity trunk ducts. With all diffusers on each branch served by one air valve, and using a minimum of sound attenuation material, costs were reduced to meet budget figures.

Project Engineers—BOOTH BROTHERS AND COMPANY

Two-story office building in Morrison, Illinois, acquired by General Electric Company. Space and cost problems arising from year-round air conditioning of an existing building were solved with a modern high velocity air distribution system, using Uni-Flo Air Valves.



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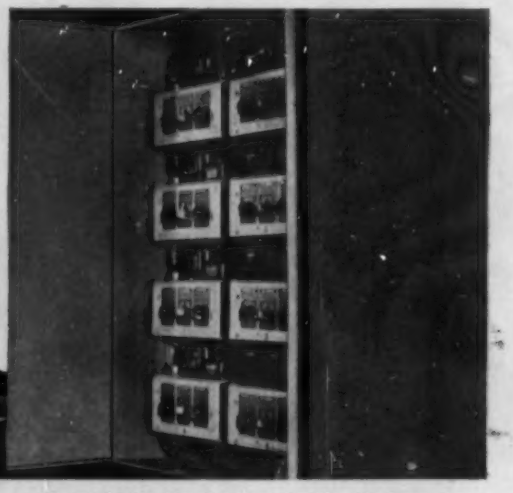
It's Barber-Colman throughout! From the electric-electronic controls in modern Control Centers, to the Uni-Flo engineered air distribution, this new home office of Monongahela Power Company has the very latest equipment for modern-day comfort. Desired temperature levels are maintained in the 150 rooms the year round, with a minimum of attention. Each of the eight zones has its own control system for maximum flexibility at minimum cost.

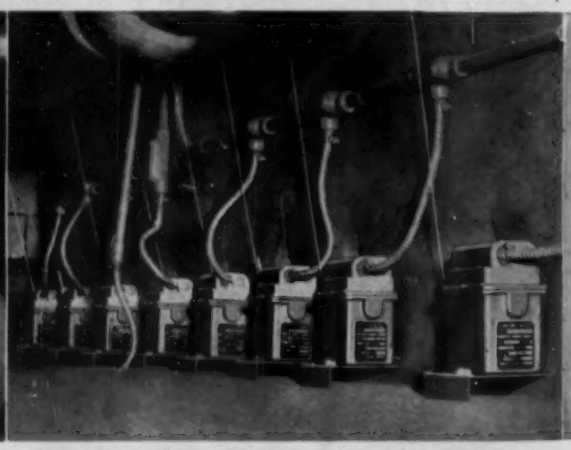
Architect: C. E. SILLING & ASSOCIATES, Charleston. *Mechanical Engineer:* JOHN PAUL JONES, CAREY & MILLAR, Cleveland. *General Contractor:* SOUTHEASTERN CONSTRUCTION CO., Charleston. *Mechanical Contractor:* STUART-McMUNN CO., Clarksburg.

$1,500,000 General Headquarters Office Building of Monongahela Power Company in Fairmont, West Virginia. This is "nerve center" of utility serving over 200,000 customers in a 12,596 square mile area. Complete building has all-year air conditioning.



Control Centers function as central junction boxes, house pre-wired accessories, numbered terminal strips for connecting all electrical components. Wiring is simplified, installation decreased, servicing minimized.

Motor-Operated Valves, with oil-submerged operators, provide control of heat exchangers and chilled water supply.



Barber-Colman Control Motors, proportioning-type, operate hot and cold deck dampers. Long and dependable operation assured by oil-submerged motor switches and gear train.

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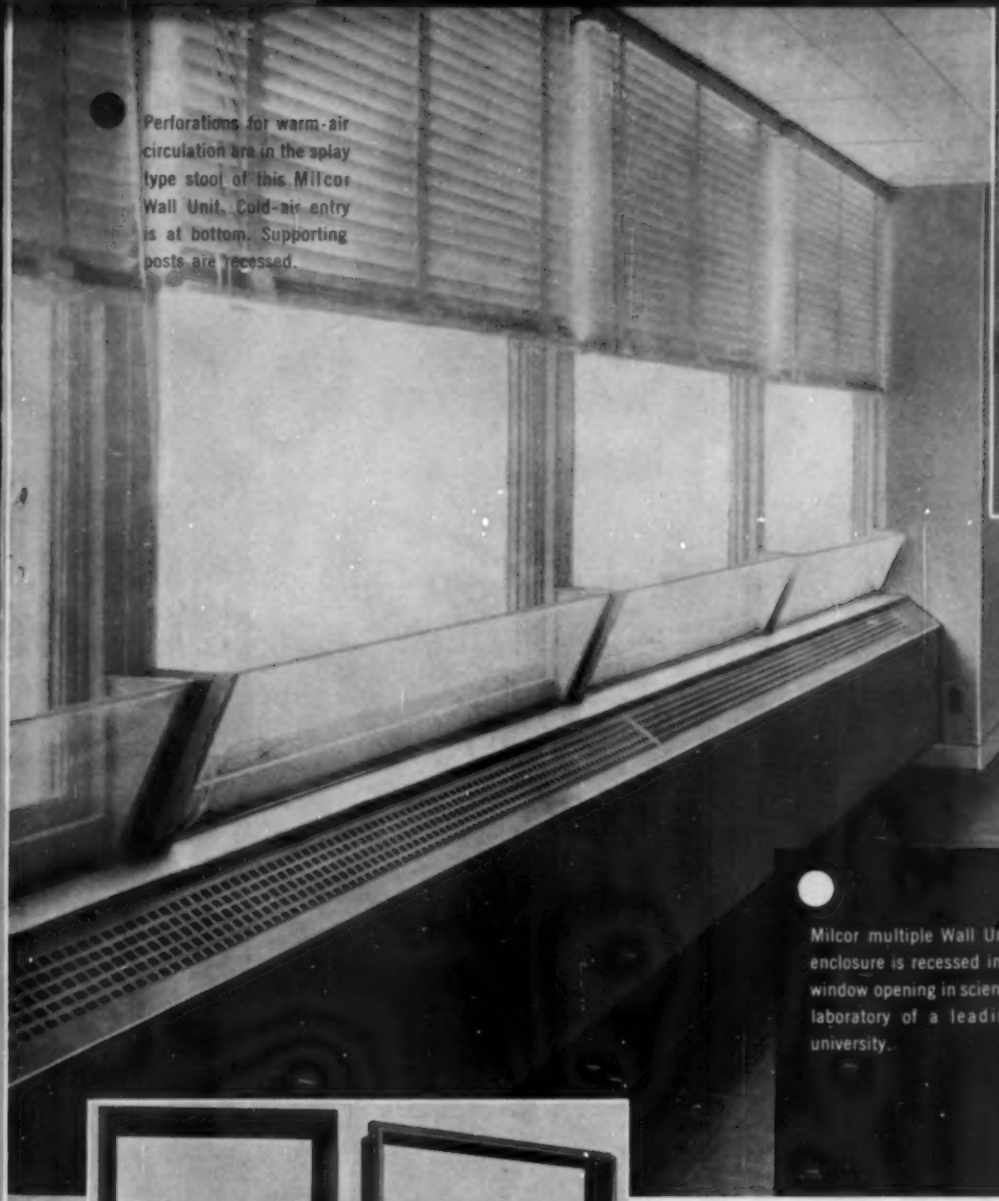
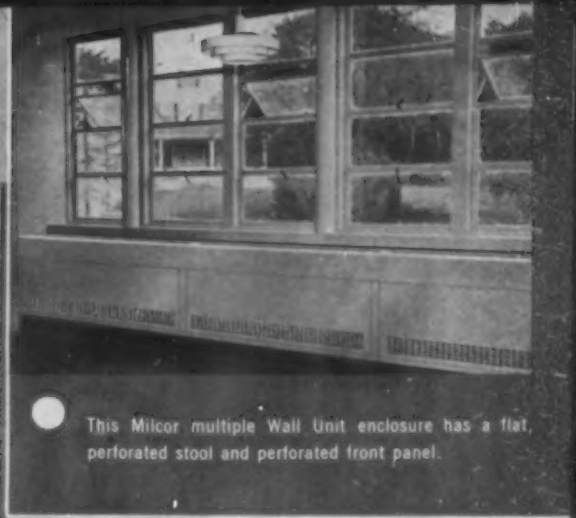
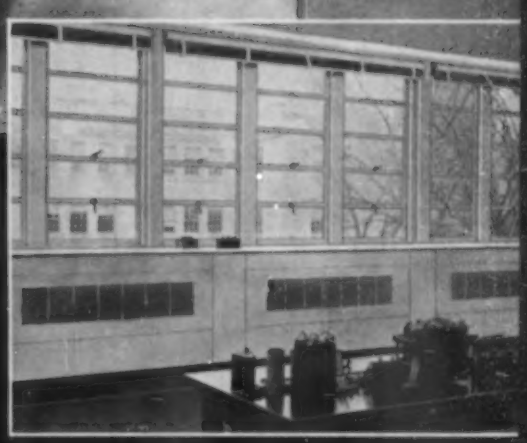


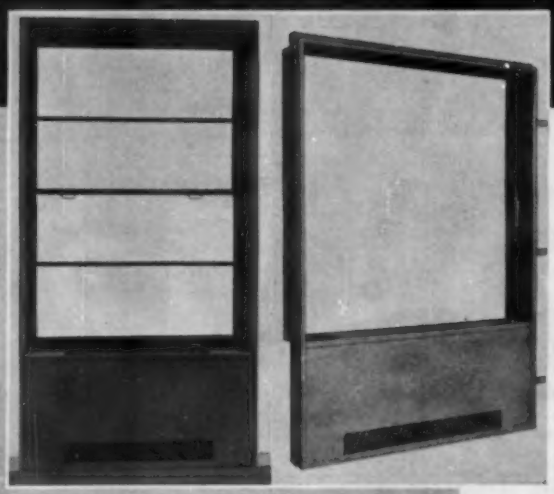
Perforations for warm-air circulation are in the splay type stool of this Milcor Wall Unit. Cold-air entry is at bottom. Supporting posts are recessed.



This Milcor multiple Wall Unit enclosure has a flat, perforated stool and perforated front panel.



Milcor multiple Wall Unit enclosure is recessed into window opening in science laboratory of a leading university.



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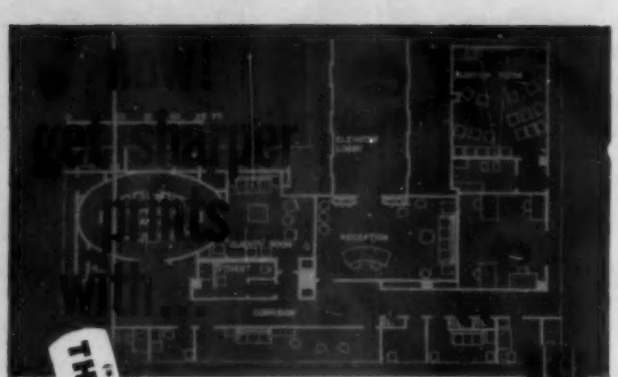

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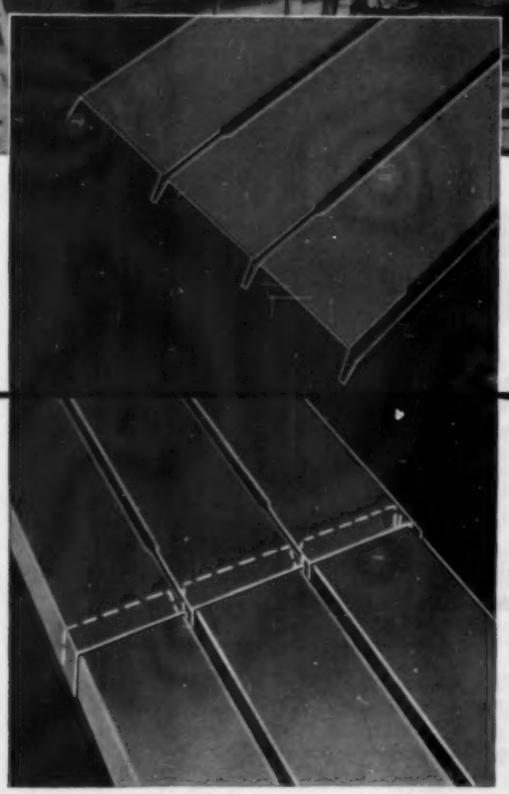

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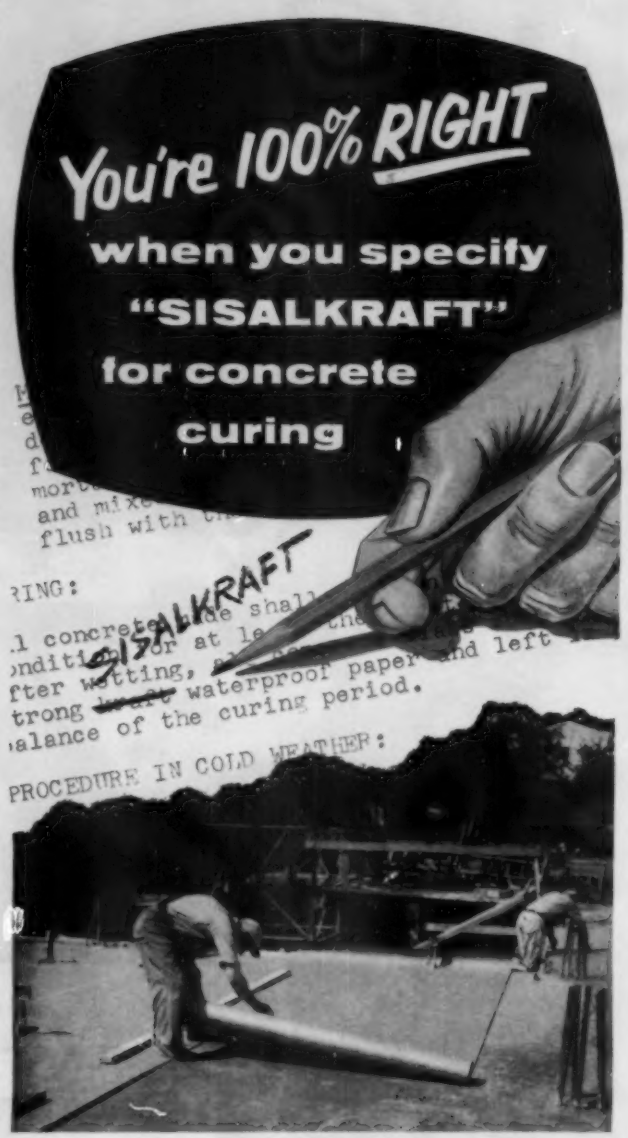

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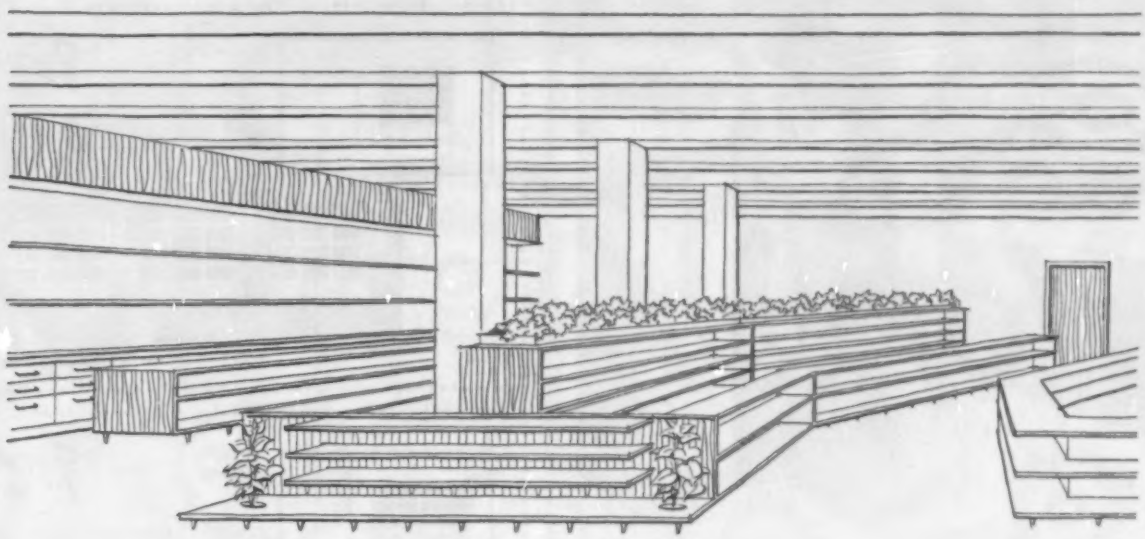

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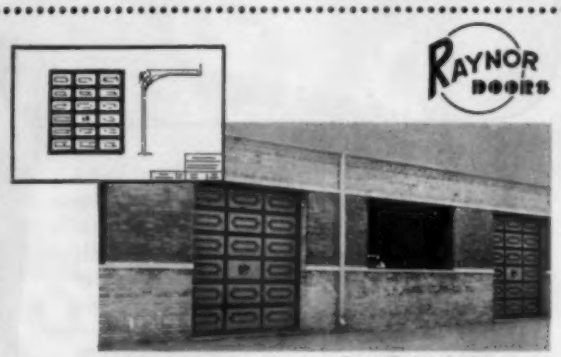

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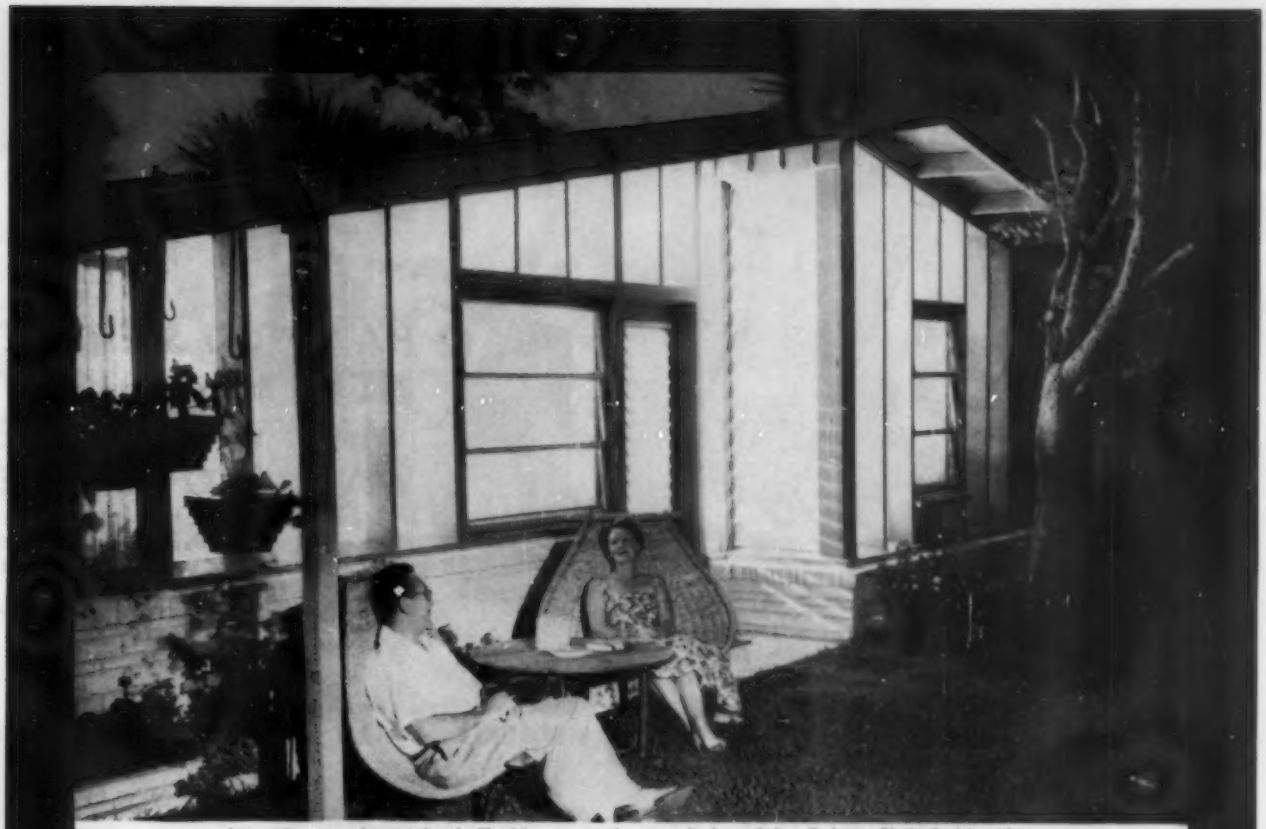

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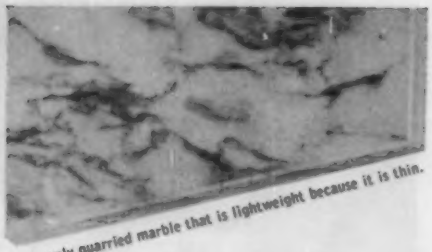

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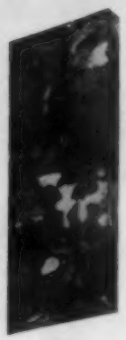

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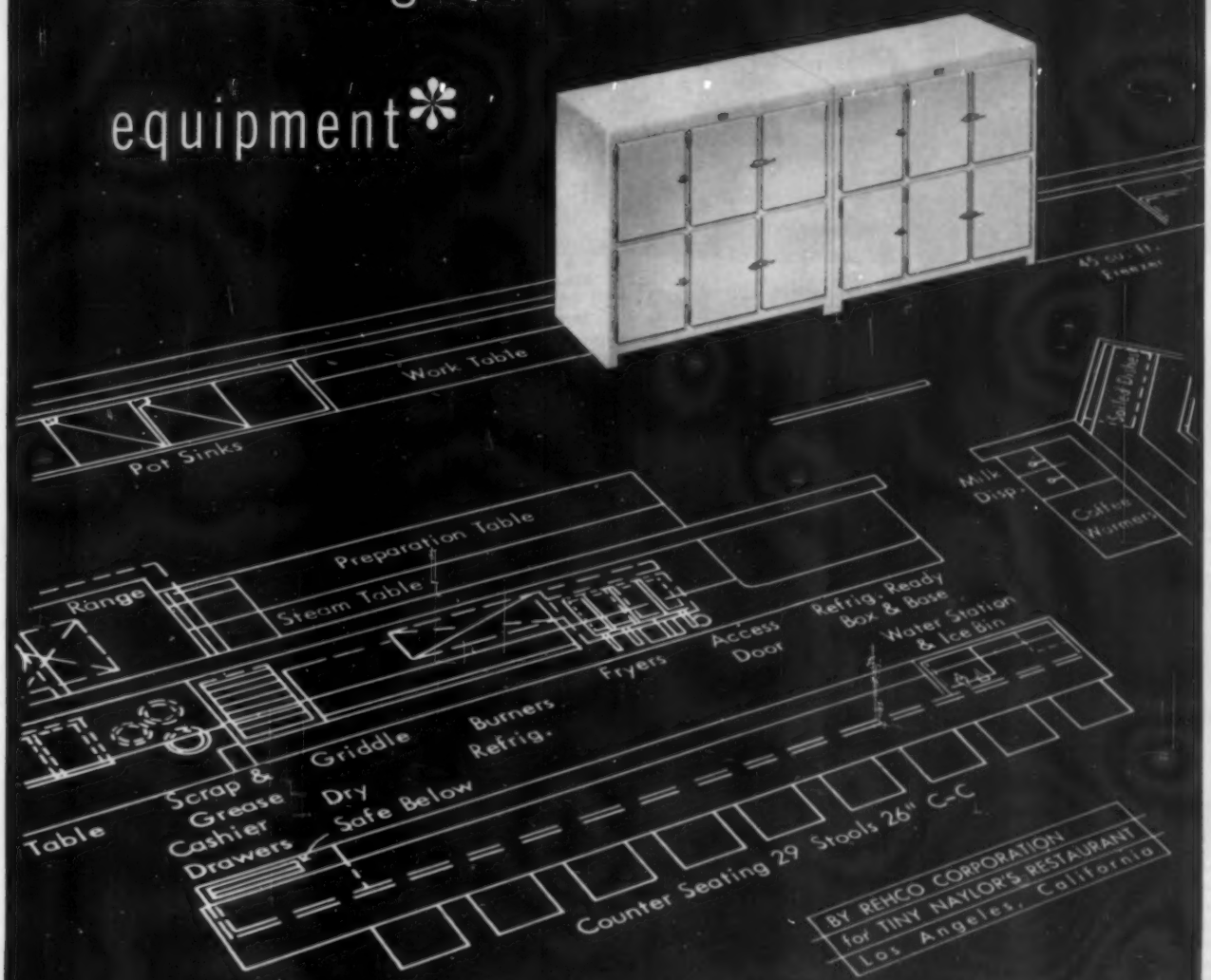

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The Marble Institute of America has issued a bulletin incorporating the warning of The A.I.A. This is available without cost.

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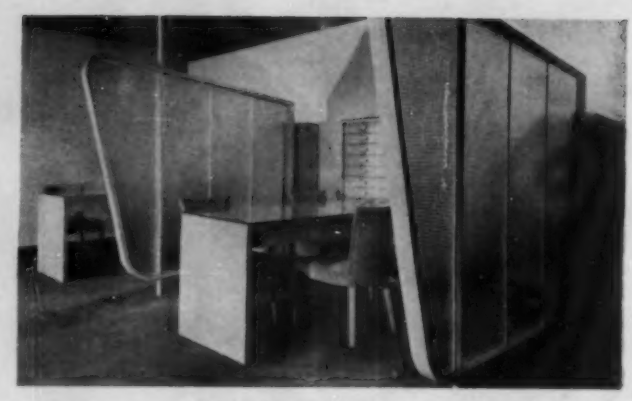

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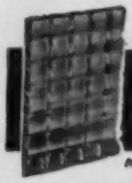

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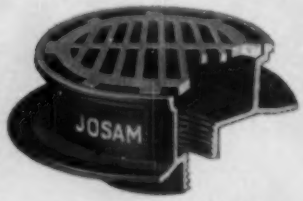

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P.S.

House for Señor Eduardo Suarez. Tepotzolan, Mexico, 1943. J. Marti & F. Candela, Architects.

While I was trying to decide whether to say anything more on this page about the Air Force Academy controversy, Frank Lloyd Wright's testimony against the design, and its first turn-down by the House Appropriations Committee as being too "Modernistic," one of our gals came in with some "overmatter" that I had had to cut from a column several months ago because I became too wordy. "Do you want to use this now?" she asked me. It just proves that it's sometimes better to wait. The paragraph read:

This column has been off on so many crusades recently that it seems time to catch up on a number of little miscellaneous items that deserve reporting. For instance, did you see the news story about the National Park Service rejecting a restaurant design by Frank Lloyd Wright for Yosemite National Park? The reason given was that the "modernized type" of building Wright proposed wouldn't fit the natural scenery. A blow against organic architecture, it seems to me. The park service director did say that "the floor plan was all right" and simply suggested that the "exterior design" be changed.

•

Now that architects are more public-relations conscious than ever, it is interesting to see how some outside groups help to explain architecture to the layman, and some stumble when they try to help. Obviously, counsel to the architectural profession can't check all releases issued by all well-intentioned parties, which is too bad.

Example of good press—from a brochure on church remodeling put out by the American Seating Company:

"The architect will work out the best possible solution to the complex problems of a church-remodeling program. The service he offers is complete. . . . In the architect's hands and under his guidance, the total effort has its best guarantee of success. A study of his qualifications will show the advantages to be gained, and will indicate the risks of a 'do-it-yourself' approach."

Example of bad press—from a release of NAHB on a perfectly worthy project in housing research to be known as Homestyle Center:

"A nine-man committee is now selecting the architects, builder teams, interior designers and landscape architects for the first 25 houses on which construction will begin in early 1956. The houses will be designed and built by specialists in their particular fields and will be widely diversified. Architectural styles include modern, contemporary, traditional, early American, colonial, Cape Cod, Oriental and experimental."

Nothing we have published in a long time has brought forth more favorable response than Felix Candela's church, in our July issue. "A genius" said one reader; "miraculous," wrote another, and so on. Candela, a modest genius, thought that we and our readers might like to see from what conventional beginnings this miracle of thin-shell manipulation started, so he sent us the photograph on this page, captioned simply: "This is a sample of my early work."

•

This month we have expanded the News Reports, which have been running for the last several issues, into a full-fledged P/A NEWS SURVEY, on eight pages of special paper, bound in at the last minute just before the main editorial section. It is the result of a great deal of soul-searching and preliminary planning around our shop, and we sincerely hope that it serves the purpose we intend it to.

Our plan with this new service is to give you last-minute news of developments in architecture and in engineering related to architecture. We have no desire to duplicate the function of newspaper reporting, or of weekly news-magazine coverage. Here, as elsewhere in the magazine, our "slant" will be professional. We don't care much that Billy Graham will open O'dell's Coliseum in North Carolina with a rousing evangelical meeting; we think you would like to know that this unique structure is successfully completed, and would like to see a current picture of it taken by a good architectural photographer. NEWS BULLETINS, WASHINGTON REPORT, and FINANCIAL NEWS will be interpretations of general news for the design professions, gathered as late as last-minute printing makes possible. Reports on new technical developments, on personality events, and on planning and design progress will be made only when we think you ought to know about them real quick.

Putting together this new section has required a slight rearrangement of the rest of the magazine, but you'll still find, conveniently we hope, the various parts of our coverage of the practice of the profession: OFFICE PRACTICE articles, to document the business side of architecture; Feature Presentations on design, planning, case histories and types of buildings; Materials and Methods technical articles, to improve knowledge in that important phase of design; SELECTED DETAILS, to show how handsome results have been arrived at in precise detail; INTERIOR DESIGN DATA, to document what, where, and at what price materials and products were well used in this growing field; personal comments, by our articulate readers in VIEWS, by Ben Small in SPEC SMALL TALK, by myself on this page, and, beginning next month, by Prof. William J. McGuinness of Pratt Institute, engineer, author, lecturer, editor (of the Gay-Fawcett-McGuinness book on *Mechanical and Electrical Equipment for Buildings*).

You will also notice, speaking of changes, that Carl Feiss bids farewell to his many ardent readers this month. We are most grateful to have had his readable, informative comments on architectural education for as long as we have (it doesn't seem possible that it was six years ago that he and I talked over the beginnings of this column in Denver!) and we do not intend that this be the end of our discussion of the subject. We hope that publishable *Letters to the Schoolmaster* will continue to arrive, and we want Carl back with us to catch us up on developments several times a year —if he can spare the time from his expanding practice.

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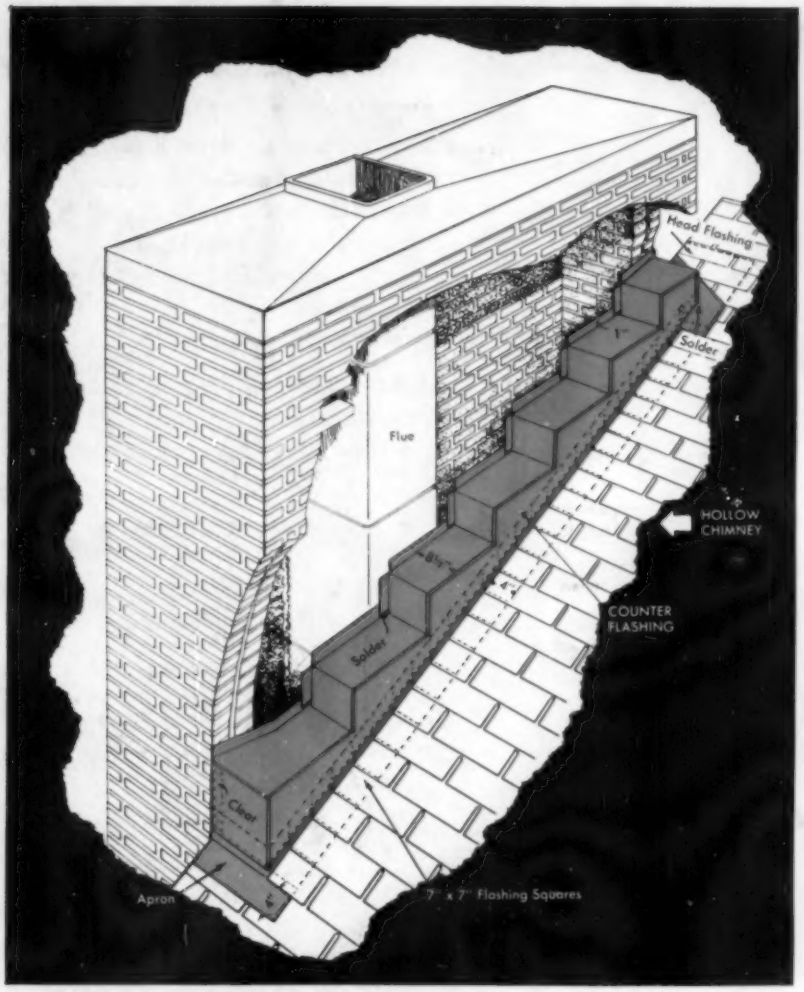
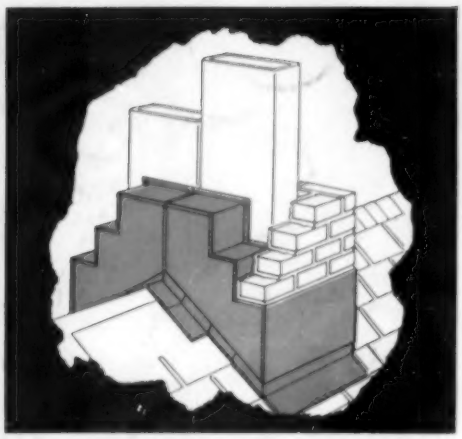
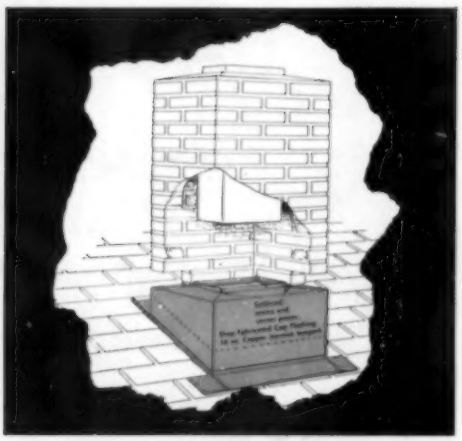


CHIMNEY OF ARCHITECTURAL DESIGN—Through-to-flue counter flashing, turned up 1" at flue, installed over base flashing at 7" x 7" squares.



CHIMNEY AT RIDGE—Flashing consists of apron at lower edge of chimney, soldered returns at corners, flashing squares leafed between shingles. Cap flashing set to form counter flashing.



CHIMNEY IN SLOPE—Single flue 8½" x 13". Base flashing formed as flange with 4" apron overlapping shingles; 12"-wide head flashing; 4"-wide flashing flange at sides of chimney.

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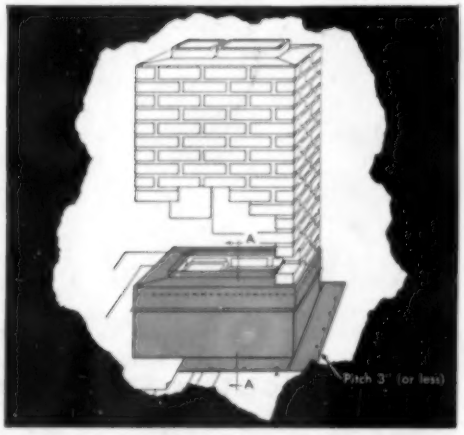

CHIMNEY IN FLAT ROOF—Base flashing must be *water-tight*, soldered at all joints. Counter flashing carried through masonry, turned up 1" at outer surface of flue.

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